CONTROL DATA

60469530-D

930 Computer
932 Computer
9639 Tape Subsystem
9730 Tape/Disk Subsystem
9836 Disk Subsystem
19002 Console

INSTALLATION Guide

/ CYBER 930
Computer System

Manual History

Revision Level	Description	ECO/FCO	Date
B	Manual revised but not printed		January 1988
C	Obsoletes all previous editions	PD 03889	April 1988
D	Obsoletes all previous editions. Manual revised to document console software level 8408C for CIP L703 release and make miscellaneous technical changes to support 932 mainframe.	PD 04092	June 1988

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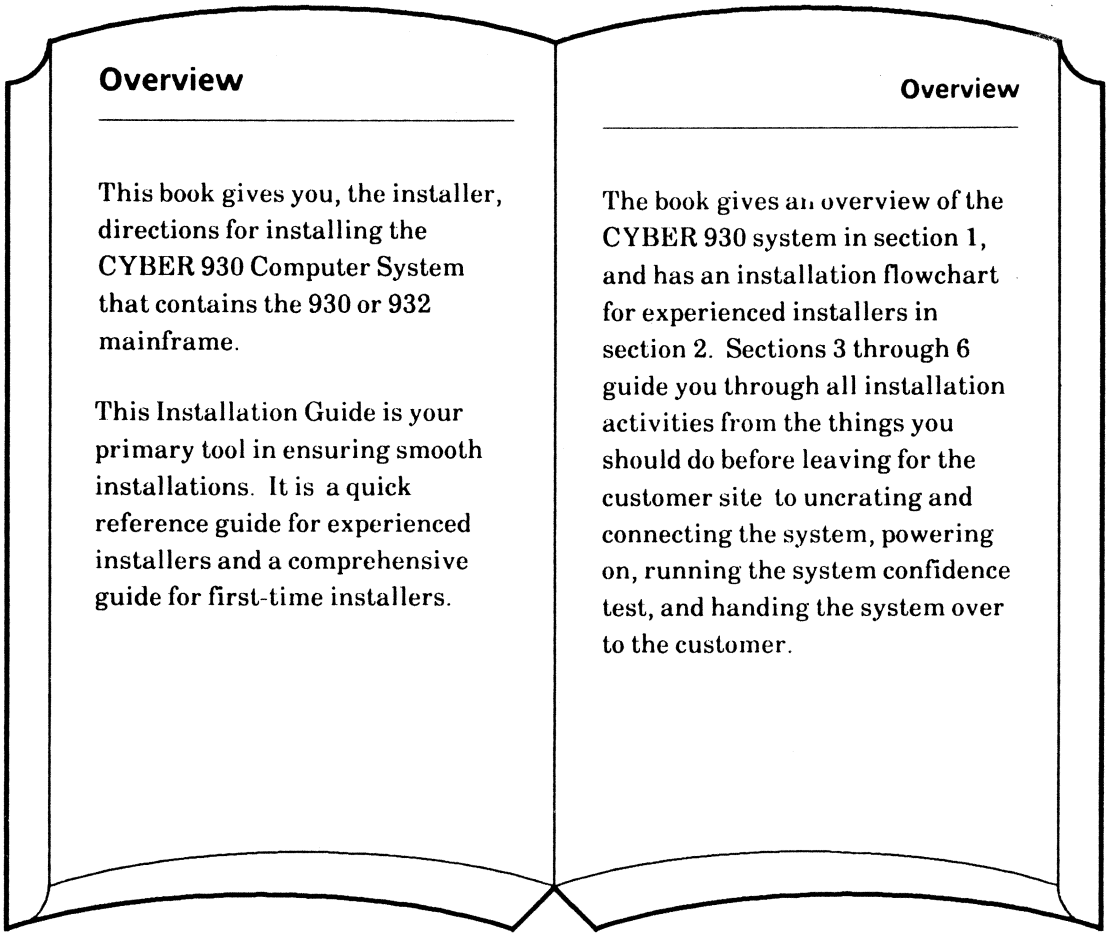
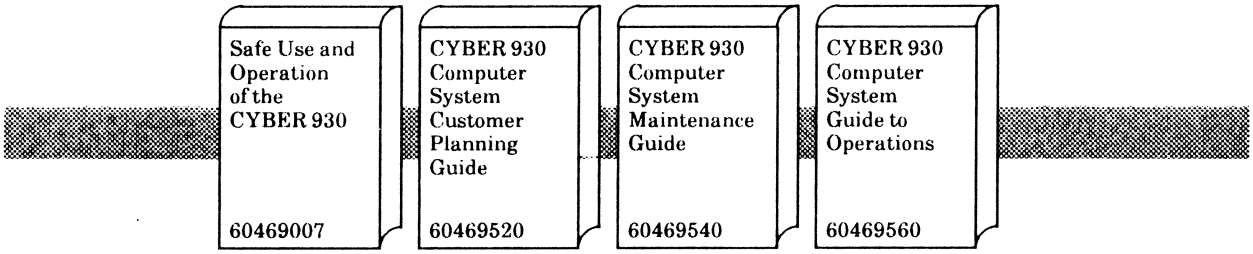
About This Book

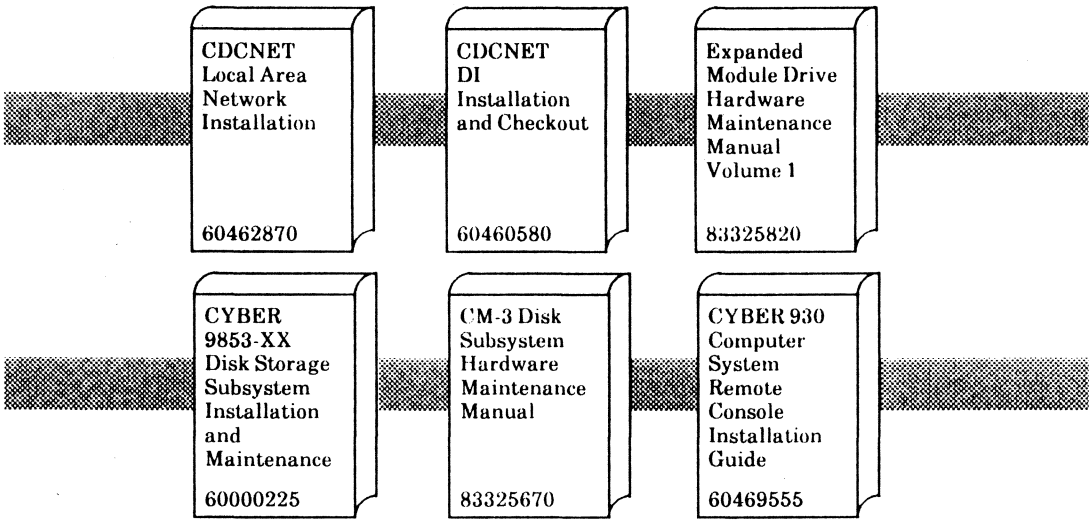

Overview
This book gives you, the installer, directions for installing the CYBER 930 Computer System that contains the 930 or 932 mainframe.
This Installation Guide is your primary tool in ensuring smooth installations. It is a quick reference guide for experienced installers and a comprehensive guide for first-time installers.
Overview
The book gives an overview of the CYBER 930 system in section 1, and has an installation flowchart for experienced installers in section 2. Sections 3 through 6 guide you through all installation activities from the things you should do before leaving for the customer site to uncrating and connecting the system, powering on, running the system confidence test, and handing the system over to the customer.

Related Publications

For more information about the CYBER 930 Computer System, consult the following publications that are shipped with the 930 or 932 mainframe:


Safe Use and Operation of the CYBER 930
60469007
CYBER 930 Computer System Customer Planning Guide
60469520
CYBER 930 Computer System Maintenance Guide
60469540
CYBER 930 Computer System Guide to Operations
60469560

You may need to refer to other manuals to complete installation activities such as installing CDCNET or a CYBER 9853 Disk Storage Subsystem. Most related manuals are shipped with the subsystem.



Ordering Additional Books

Copies of the CYBER 930 Installation Guide are available from Control Data Literature and Distribution Services.

For more information about Control Data publications and how to order them contact:

Control Data Literature and Distribution Services
308 North Dale Street
St. Paul, Minnesota, U.S.A. 55103

Making Comments on This Book

To improve the installation process, we need the following feedback to make the CYBER 930 Computer System installations faster, smoother, and more dynamic:

- What parts of the guide helped you install the system?
- Are there any errors in the book?
- Can you find the information you need?

Send us your feedback either by filling out the Comment Sheet at the back of this book or by submitting a Technical Action Request (TAR).

Publications will respond to your comments and make sure that the CYBER 930 Installation Guide gives you the information you need. For a a direct and speedy response, give us your Engineering Services branch office address and your telephone or Controlnet number.

If You Encounter Difficulties

If you have difficulties during an installation, refer to the CYBER 930 Computer System Maintenance Guide [Control Data publication 60469540] shipped with the equipment to the customer site.

Follow the escalation procedures outlined by your Engineering Services branch office. Contact your Engineering Services branch manager or your engineer-in-charge.

Calling for Help

If you do have problems during an installation, help is available. Call Engineering Services Customer Support Services where an experienced CYBER 930 technical support engineer will answer all your questions and help you in installing the system.

To contact Engineering Services Customer Support Services:

In the **continental United States**, call	**800 345-9904**
In **Canada**, call	**800 345-9903**
For **Alaska, Hawaii, and international sites**, call ...	**612 851-4131**

RADIO FREQUENCY WARNING

This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device and peripheral computing devices pursuant to Subpart J of Part 15 of the FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

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Toward Installability

From a customer's perspective, a computer system that requires a minimum of effort to prepare for and that takes little time to install is also easy to use and maintain. Because customers tend to think of all of these qualities together, installability features have been built into the CYBER 930 Computer System.

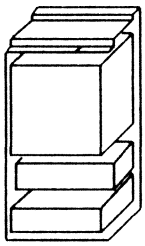
Each 930 system is configured to the customer's order and has the following characteristics:

- Software is preinstalled;
- Peripherals are complete (internal cables are preconnected);
- When the equipment arrives, most interconnect cables are preattached to a cabinet for connection to another cabinet or to a power source.

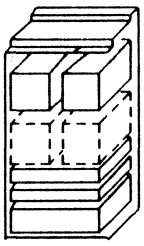
As you can see, the installation process started before the cabinets were shipped to the customer's site.

The Control Data CYBER 930 Computer System offers customers the power of a high-end superminicomputer in compact form. It features high performance, reliability, and cost-effectiveness in a system suitable for installation and operation in an office environment.

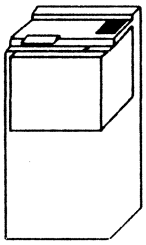
The 930 system consists of a console and four cabinets.



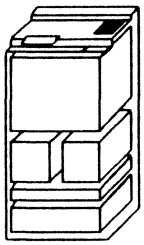
The 930 or 932 **mainframe** contains the central processor, central memory, input/output unit, and interfaces to the console, CDCNET communications system, and peripherals.



The **disk cabinet** contains two or four 414-megabyte formatted disk drives. Each disk drive has an unformatted capacity of 515 megabytes.



The **tape cabinet** contains one Intelligent Small Magnetic Tape drive (ISMT).



The **tape/disk cabinet** is a special cabinet that contains one ISMT tape drive and two 414-megabyte formatted disk drives.

The smallest complete CYBER 930 Computer System has just two cabinets--a mainframe and a tape/disk. The largest system may have forty cabinets.

Notice that the cabinet combinations and physical layouts used in the illustrations vary considerably throughout the guide. This is done deliberately to reflect the flexibility of the 930 system and the various configurations and cabinet combinations you are installing at the customer sites.

Two publications that are related to the installation of the CYBER Computer System are shipped with either the 930 or 932 mainframe:

For the physical, electrical, and environmental specifications for each of the cabinets and the console, refer to the CYBER 930 Computer System Customer Planning Guide [Control Data publication 60469520].

For additonal information on the CYBER 930 Computer System, refer to the CYBER 930 Computer System Maintenance Guide [Control Data publication 60469540].

Exercise Care

Be careful when working with the cabinets. Warnings, cautions, and notices are clearly marked on all cabinets. For your safety, read all labels and follow their directions.

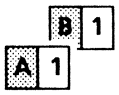
Each CYBER 930 Computer System is set up according to the customer's floor plan wherever possible. The floor plan should take into account:

- The number of cabinets in the system;
- Optional cable lengths required;
- A cable management strategy;
- The location of power outlets;
- Reasonable cabinet service clearance. Sixty cm (2 ft) for service clearance at the back of each cabinet is recommended although not mandatory.

Each peripheral cabinet has a unique identification label on the lower left corner of the front door. These two-character identifiers provide connectivity information:

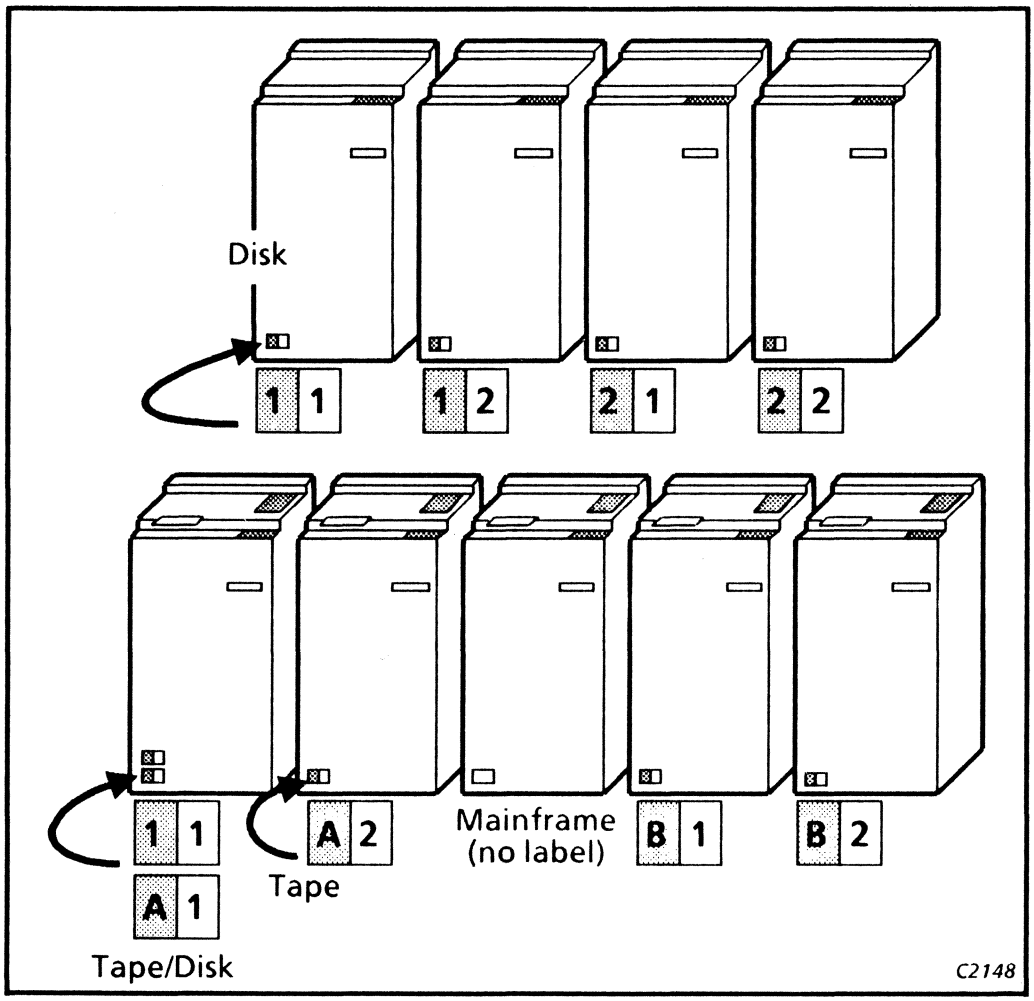
- Tape cabinet identifiers are alphanumeric;
- Disk cabinets identifiers are numeric ;
- Tape/disk cabinets have two labels: a disk identifier label and a tape identifier label;
- The mainframe has no identifier.

Onsite Configuration Changes



The identifier labels are applied to the cabinets when the system is configured to each customer's order. A duplicate identification label is also applied to the top right label plate inside the rear of each peripheral cabinet. Unused portions of the Label Kits are stored inside the front door pocket of the mainframe, to be used when adding peripherals or when permanently changing the physical configuration on-site.

Positioning Cabinets by Identifier Labels



Cable Configuration Map

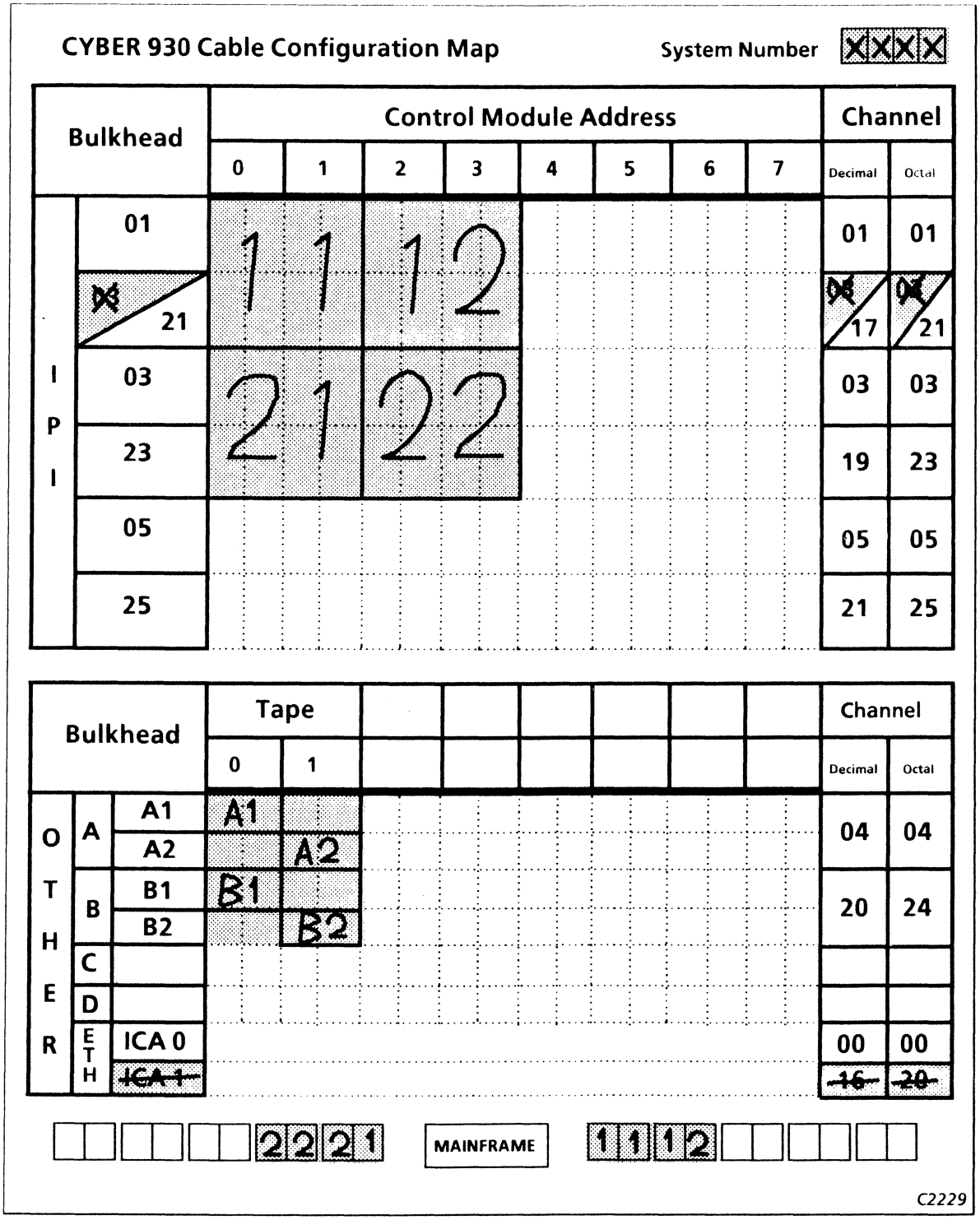
Inside the pocket of the front door of the mainframe is a cable configuration map. It shows the specifications for connecting the system.

The cable map was completed at the factory when the system was configured to the customer's order. The two-character cabinet identifiers on the cable map match the labels on the peripherals in the system.

The cable configuration map supports installation and shows the location of specific equipment referenced in diagnostic messages during system maintenance. Refer to section 5, Connecting the CYBER 930 Computer System, for more about using the cable map during installation.

A sample completed cable map is shown in the figure opposite.

Cable Configuration Map



Positioning and Connecting the Cabinets

The cabinets are on casters so that you can easily position the cabinets by moving them forward and backward. However, before you start moving the cabinets into their final position, you should be aware of the following connectivity concepts and cable length restrictions that apply to connecting the cabinets.

If you cannot position the cabinets according to the customer's floor plan, discuss the plan with them. Be prepared to offer them practical alternatives that are as close as possible to their original plan.

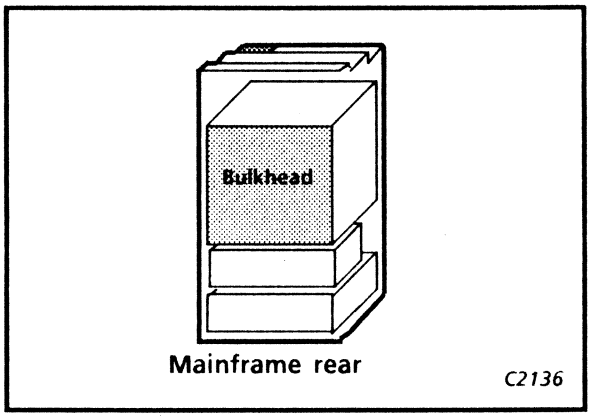
Check with the customer *after* you position the cabinets and *before* you extend the leveler feet and cable the system. This is especially important if, for any reason, the customer's original floor layout has changed.

Mainframe

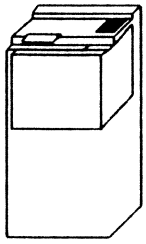
All peripheral cabinet signal cables are connected to the mainframe bulkhead either directly (tape cabinet--star connection) or indirectly (disk cabinet--daisy chain).

The mainframe does not have an identifier label. On most floor plans, the mainframe is placed in the middle.

930 Mainframe Bulkhead



Tape Cabinet



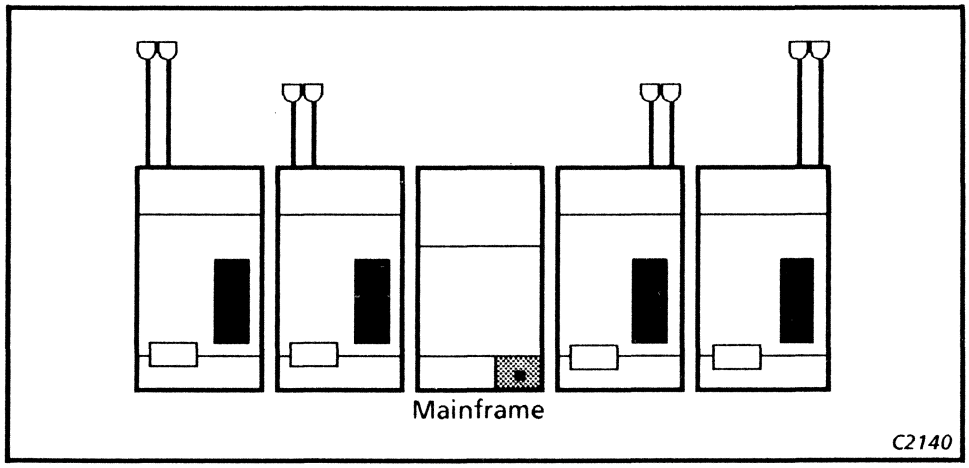
The CYBER 930 Computer System supports up to four tape cabinets labeled **A1**, **A2**, **B1**, and **B2**. Details are in section 5, Connecting the CYBER 930 Computer System.

Tape cabinets use a star connection to the mainframe. The signal cables from each tape cabinet are connected directly to the mainframe.

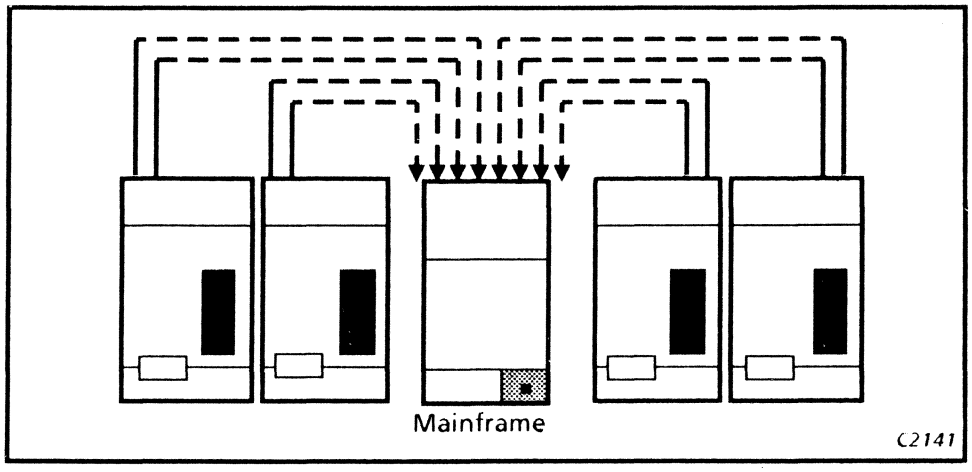
Tape cabinet signal cables are 4.6 m (15 ft). This signal cable must travel from the inside of the tape cabinet to the inside of the mainframe. There are no extender cables available for the tape cabinet. You can, however, place all tape cabinets together on one side of the mainframe within this cable length restriction.

The following figures show generally how the tape cabinets are connected to the mainframe.

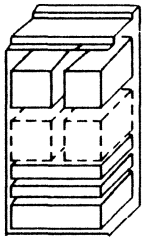
Tape Cabinet Signal Cables That Are Preattached



Tape Cabinet Signal Cables--Star Connection to Mainframe



Disk Cabinet



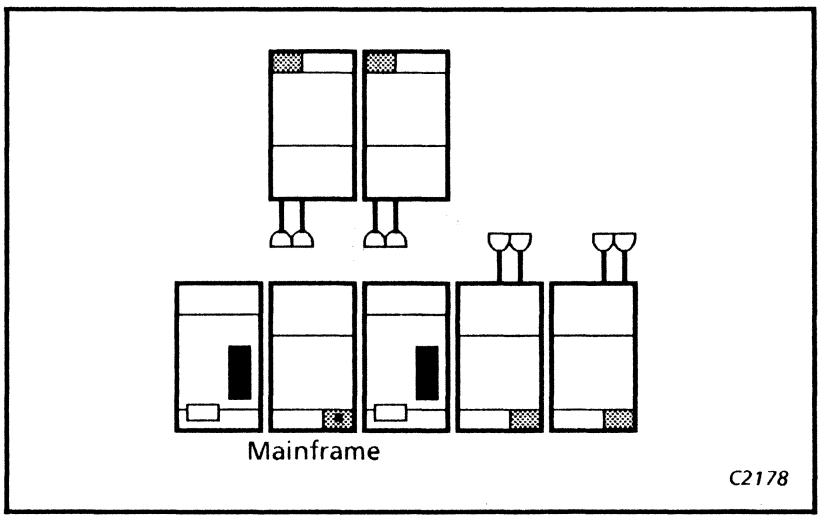
The CYBER 930 Computer System can support many disk cabinets that use a daisy chain connection to the mainframe. Disk cabinets are labeled by series or string (first number in the identifier) and the cabinet's position in the series (second number in the identifier). For example, **11** , **21** , **22**, **23**. Details on this are in section 5, Connecting the CYBER 930 Computer System.

The first disk cabinet (**11** or **21**) in the first or second chain has its signal cables directly connected to the mainframe. Other disk cabinets in the series (**12**, **22**) are indirectly connected to the mainframe. These cabinets are directly connected to the previous disk cabinet in the same series. For example, cabinet **12** is connected to cabinet **11**; cabinet **22** is connected to cabinet **21**.

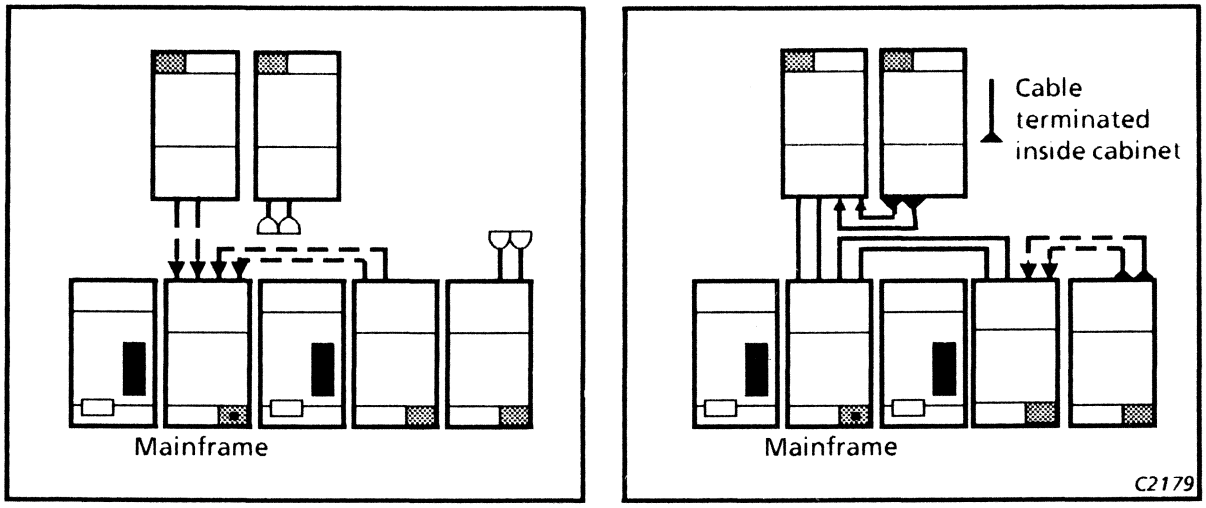
All disk cabinets have standard 3 m (10 ft) signal cables attached on delivery. Extender cables are available as a customer option in sets of two 4.6 m (15 ft) or 22.9 m (75 ft) lengths. Any disk cabinet in any string can have only one set of extender cables.

The following figures show how the disk cabinets are connected to the mainframe and to each other. The figures do not show detailed cabling. Note that the signal cables of the disk cabinet terminate internally.

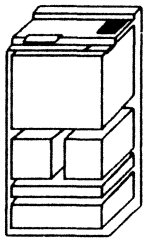
Disk Cabinet Signal Cables That Are Preattached



Disk Cabinet Signal Cables--Daisy Chain to Mainframe



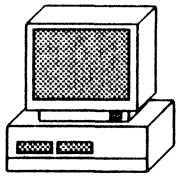
Tape/Disk Cabinet



The tape/disk is in a special cabinet that has both tape and disk identifiers.

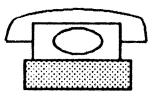
The tape signal cables and disk signal cables are treated the same as in the tape cabinet and disk cabinet, respectively: connectivity, as well as standard and optional cable lengths, are identical.

Console



The console is connected directly to the mainframe. There is only one signal cable length available. Since the console to mainframe cable is 15.2 m (50 ft), positioning will usually pose no difficulty.

Modem



A modem is required for customers who have Remote Technical Assistance. The console-to-modem signal cable is 1.8 m (6 ft). Therefore, place the modem for Remote Technical Assistance next to the console. The modem cable is included with the system.

NOTE

As the installer, you must provide this modem. Order it early to ensure that it is available for installation.

Telephone Assistance

Calling for Help

If you encounter difficulties and need help during an installation, follow the escalation procedures outlined by your Engineering Services branch office. You may also want to contact your engineer-in-charge or your Engineering Services branch manager.

Telephone assistance is available from Engineering Services Customer Support Services 24 hours a day, seven days a week. An experienced CYBER 930 technical support engineer will help you solve any problems during installation.

You can call Hardware Technical Support at one of the following telephone numbers:

In the continental **United States**: **800 345-9904**

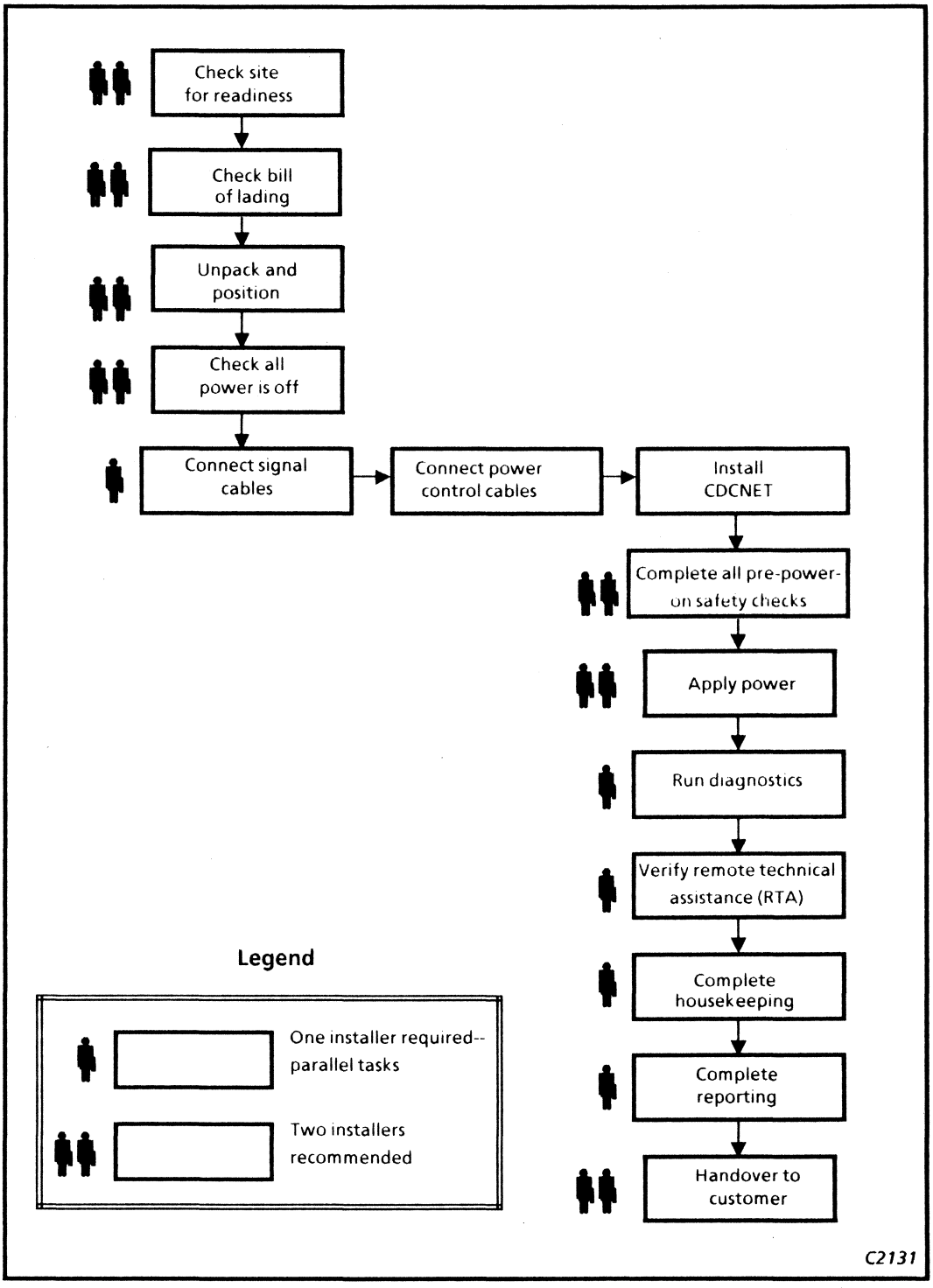
In **Canada**: **800 345-9903**
Code 33 will connect you to Hardware Technical Support.

For **Alaska, Hawaii,** and **international sites**: **612 851-4131**

Section 2
CYBER 930 Installation Process

Installation Flowchart 2-2

Installation Flowchart



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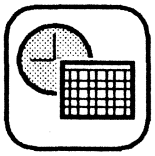
Schedule and Confirm Installation Date and Time

Scheduling the Installation

After the site is prepared and they have received the equipment, CYBER 930 Computer System customers usually telephone the sales representative. Installation is then scheduled with an **acclimatization period** taken into account.

> **CAUTION**
>
> Installation must take place at least 24 hours after the equipment arrives at the customer site and has been moved to the designated location. Do not uncrate any cabinets during acclimatization. The packaging material allows the equipment to adjust slowly to room temperature.

Confirming Installation Date and Time



The customer should have prepared the site according to the directions in the CYBER 930 Computer System Customer Planning Guide [Control Data publication 60469520].

There is no site readiness check before installation. Therefore, you must call the customer to confirm that they are prepared for installation.

Before you contact the customer, review the CYBER 930 Customer Planning Guide [Control Data publication 60469520]. This book includes a customer planning checklist that outlines the customer's preinstallation responsibilities.

During your telephone conversation, the customer may refer to the Customer Planning Guide. Be prepared for specific questions about the preparations they made and the floor plan they selected for their system.

A preinstallation checklist for your use follows.

Preinstallation Checklist

Complete the following Preinstallation Checklist. If the customer is not prepared for installation, or if you are concerned about the customer's responses to any of the foregoing, discuss them with the engineer-in-charge or your Engineering Services branch manager.

- ☐ What is the name of the customer contact you ask for when you arrive at the site?
- ☐ Do you have the correct address at which the system is to be installed?
- ☐ Has the shipment arrived?
  - ☐ When did the equipment arrive?
  - ☐ When was the equipment moved to the location where it is to be installed?

NOTE

Ensure that a full 24 hours of acclimatization elapses before installation. If you are uncertain about the acclimatization period, check with your Engineering Services branch manager or engineer-in-charge.

- ☐ Did the customer notice any damage to the shipping containers--in particular the large (cabinet) crates--on delivery?
- ☐ What are the details of their CYBER 930 Computer System order, including the number of tape, disk, and tape/disk cabinets?
  - ☐ In general, how is the customer planning to physically configure (lay out) their system?
  - ☐ Did they order optional cables usually required for this kind of layout?
- ☐ Has power been installed at the site for the 930 system?
- ☐ Has the customer arranged for an electrician to be on site at the same day and time as the scheduled installation? An electrician is required under any one of the following conditions:
  - ☐ Power in the area is 50 Hz
  - ☐ Local electrical codes require an electrician to be present
  - ☐ The customer wants the power cords hard wired
  - ☐ Special power cords (longer, armored) and strain release plates are being installed

(checklist continued on next page)

- ☐ Has the customer allowed for Remote Technical Assistance?
  - ☐ Have services for utilities, such as power been supplied?
  - ☐ If local regulations stipulate that modems are supplied and installed by the telephone service or other agency, has a modem been provided ?

NOTE

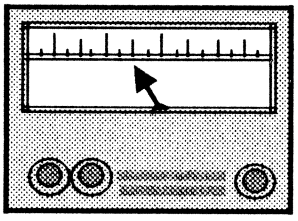
Unless local regulations are to the contrary, you are responsible for providing a modem for Remote Technical Assistance (RTA). Make sure that a MultiTech Systems MultiModem 224E is available at the site. The 1.8 m (6 ft) modem cable is supplied with the CYBER 930 system.

- ☐ Has a telephone been connected for RTA?
  - ☐ Is this a direct line? RTA cannot go through a switchboard.
  - ☐ What is the RTA telephone number?
  - ☐ Is the RTA direct line dialing *pulse* or *touch tone*?
- ☐ Has the customer ordered a remote console?
  - ☐ Have services, including power, been supplied?
  - ☐ Has an approved modem been provided ?
  - ☐ If local regulations stipulate that modems are supplied (and installed) by the telephone service or other agency, has a modem been provided?
- ☐ Has a telephone been connected for the remote console?
  - ☐ Is this a direct line? (The remote console cannot go through a switchboard.)
  - ☐ What is the telephone number of the remote console?
- ☐ Will the 930 be installed into an existing CDCNET network?
- ☐ Is an analyst available on site? If not, has the customer made arrangements for an analyst to be present during installation?

Tools

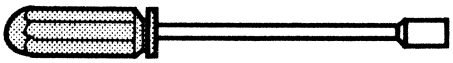
You will need the following tools from the standard customer engineer's toolkit to install the CYBER 930:

☐ **Volt meter**
for checking power receptacles

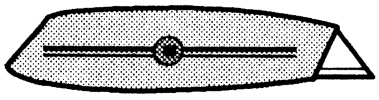


☐ **10 mm (3/8 in) socket wrench**
for removing shipping screw of the tape cabinet

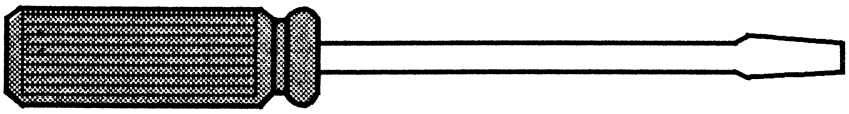
☐ **5 mm (3/16 in) nutdriver**
for securing cable connectors



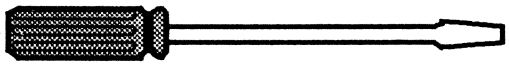
☐ **Utility knife**
for cutting packing straps



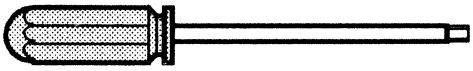
☐ **Large flat slot screwdriver**
for adjusting tape pawl fastener



☐ **Small flat slot screwdriver**
for securing cable connectors

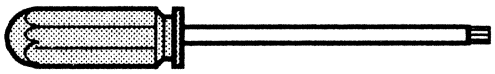


☐ **4 mm (5/32 in) hexdriver**
for opening rear latch of cabinet door



☐ **15 mm (9/16 in) open wrench**
for removing pallet screws and shipping bolts, and for adjusting leveler feet

☐ **T25 Torx screwdriver**
for removing holding screw on the tape cabinet door



Devices

Remote Technical Assistance Modems

You should provide the modem, install it, and verify that RTA is operational during system checkout.

The modem used for Remote Technical Assistance (RTA) in North American for the CYBER 930 Computer System is the MultiTech Systems MultiModem 224E.

In some European countries, modems are provided by the public telephone service or other agencies. If you are installing a modem other than the MultiTech Systems MultiModem 224E, get the modem-specific setup information from Engineering Services Customer Support Services.

Maintenance Kit and Diagnostic and Installation Kit

Make sure that you take the maintenance kit and the diagnostic and installation kit to the customer's site in case you have to replace field replaceable units during installation.

Books

All manuals stay at the customer's site for use by the customer and Control Data personnel.

System Books

A copy of the CYBER 930 Installation Guide is packed in Box 1 with the mainframe. Look for the large *Open First* label that is on the lid of Box 1.

A copy of the Customer Planning Guide is also shipped with the 930 system. If the customer has lost or misplaced their floor plans or their power information for the electrician, use this copy and proceed with the installation.

CDCNET

Check both CDCNET Local Area Network Installation [Control Data publication 60462870] and CDCNET DI Installation and Checkout [Control Data publication 60460580] to determine what special tools you should bring to install CDCNET.

Printer

If you also install a printer, refer to the printer manual and the CDCNET DI Installation and Checkout manual. The printer manuals are shipped with the printer; CDCNET manuals are shipped with the NOS/VE product set publications.

Media

Operating System Software Tapes

Tapes containing NOS/VE operating system software and product software are delivered with the equipment. These tapes belong to the customer and are stored with the 930 system as the customer directs.

Console Software Diskettes

Floppy diskettes containing console software are also delivered with the equipment. Like the tapes, the floppy diskettes belong to the customer and are stored with the 930 as the customer directs.

The QSA Manual and IQP reporting

Keep detailed notes on the installation for reporting purposes. An Installation Quality Program (IQP) report must be completed for each installation. The IQP report, and directions for completing it, are in the QSA manual.

A QSA manual is packed with the 930 documentation in the miscellaneous box. The QSA manual includes forms and directions for field technical reporting requirements.

If you have questions about the QSA manual or the IQP report, contact the person listed inside the front cover of the QSA manual.

Section 4
Arriving On Site: Starting Installation

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Customer Responsibilities

The CYBER 930 customer is aware of their part in preparing for installation and should have the following ready for you:

- ☐ The bill of lading they received when their equipment was delivered;
- ☐ Their completed planning checklist;
- ☐ Their completed floor plan showing the location of all cabinets, power, Ethernet, telephone, telephone jack, furniture and the console;
- ☐ Strain relief plates that they need to order for using other main AC input cables that have a diameter greater than 20.6 mm (.81 in) or less than 11.4 mm (.45 in);
- ☐ A cable routing plan and the cable management equipment required;
- ☐ The date and time when their electrician will be available. If their system uses 50-Hz power, local electrical codes require an electrician for hardwiring of power cords or installation of special power cords and strain relief plates;
- ☐ The date and time when an analyst will be available.

Check Site Readiness

Both installers participate in and complete the following site readiness check. This gives you both an opportunity to review and become familiar with specific installation requirements.

- ☐ Review the customer's floor plan and cable routing (or cable management) plan for reasonableness.
  - ☐ Are optional signal or power control cables required for this particular layout?
  - ☐ Did the customer order and receive the required optional cables?
  - ☐ Will there be problems in working to the customer's floor plan?
    - ☐ If necessary, discuss alternative layouts with the customer.

NOTE

If optional cable lengths are required but were not ordered, call your Engineering Services branch manager or engineer-in-charge after you finish checking the site for readiness.

- ☐ Inspect the location for appropriateness.
- ☐ Does the location seem warm, damp, or crowded?
  - ☐ If there is something unusual about the environment, mention it to the customer.
  - ☐ Include the unusual environmental conditions in your reports at the end of installation.
- ☐ Is the equipment in the designated installation location?
- ☐ If yes, is it still packaged and on pallets?
- ☐ If no, check the route the 930 cabinets will travel to reach the installation location. The 930 cabinets cannot be moved up or down an incline steeper than ten degrees.
- ☐ Are boxes damaged?
  - ☐ Are any of the large (cabinet) boxes damaged?

- ☐ Are all required electrical outlets in place?
  - ☐ If not, when is the electrician expected?

NOTE

If power is unavailable and an electrician is unavailable, call your Engineering Services branch manager or engineer-in-charge for instructions about whether or not to proceed with the installation.

  - ☐ If an electrician is required because of local regulations or special power requirements, when is the electrician expected?
  - ☐ Are additional service outlets available for the console and modem?
- ☐ Is Ethernet in place and accessible?
- ☐ Are both a telephone and telephone jack available (if applicable) for Remote Technical Assistance?
- ☐ Which table or desk should be used for the console?
- ☐ Where are the cable management materials, if required?
  - ☐ Who installs the utility poles, overhead cable channels, or cable ramps.
  - ☐ If the customer wants to route cables under a raised floor, where are the tiles with cutouts?
- ☐ Where would they like to store their manuals, tapes, and floppy diskettes?
- ☐ Do they plan to store the cabinet packaging?
  - ☐ If so, where do they want to store it?
  - ☐ If they want to scrap the cabinet packaging, where should you discard it?

If you are concerned about any aspect of site readiness, call your Engineering Services branch manager or engineer-in-charge for further directions.

Check the Bill of Lading

Check the delivery against the bill of lading. If anything is missing, report it to the Engineering Services branch manager or engineer-in-charge immediately and wait for further directions.

Review the packing list provided on the outside of each box so that you know where to find things later on.

Plan Your Approach

Plan your approach for the installation according to the customer's order and their plans for setting up the system. Keep in mind the layout, cable management strategy, and number of cabinets at the site.

You may refer to the Installation Flowchart in chapter 2, CYBER 930 Installation Process, to plan your approach and decide who is responsible for each installation activity.

The average 930 system installation takes about four hours from checking site readiness to handing over the system to the customer. This time is based on the installation of four cabinets: the mainframe, one disk cabinet, and two tape cabinets. CDCNET installation is not included in the four hours.

The lead installer has usually had experience in installing at least one CYBER 930 Computer System. To save time, the experienced installer should direct the installation activities.

Wherever possible, those activities that require only one installer should be done in parallel by the installers to keep installation time to a minimum. For example, while one installer secures signal cables, the other installer connects the power control cables; while one installer cables all disk cabinets, the other installer cables all tape cabinets.

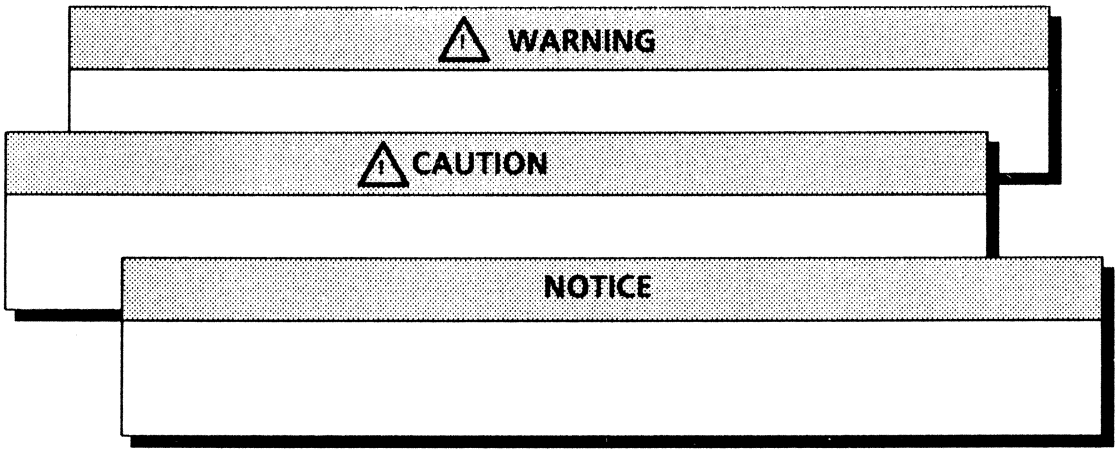
Some activities require two installers. These activities, however, can be done quickly by having one installer work at the front of the cabinets while the other works at the back of the cabinets. Some examples of such activities are removing pallet screws, removing shipping bolts, and securing leveler feet.

Work Safely with the Cabinets

Each Installation Guide has with it a copy of the CYBER 930 Computer System Guide to Safe Use and Operation [Control Data publication 60469007]. Read this booklet to become familiar with the safety guidelines and recommendations.

Exercise care when working with the cabinets. Though the CYBER 930 Computer System cabinets are compact and readily mobile, they weigh from 160 kg (350 lbs) to 364 kg (800 lbs).

Warnings, cautions, and notices are clearly marked on all cabinets. For your safety, read these labels carefully and follow their directions.



Unpack the Cabinets

Work on one cabinet at a time, starting with Box 1. As you unpack and position the cabinets and other boxes, visually inspect for damage. Make a note of and report on anything that appears unusual.

The figure opposite shows the packaging in which the CYBER 930 cabinets are shipped. A ramp is packed with each cabinet.

NOTE

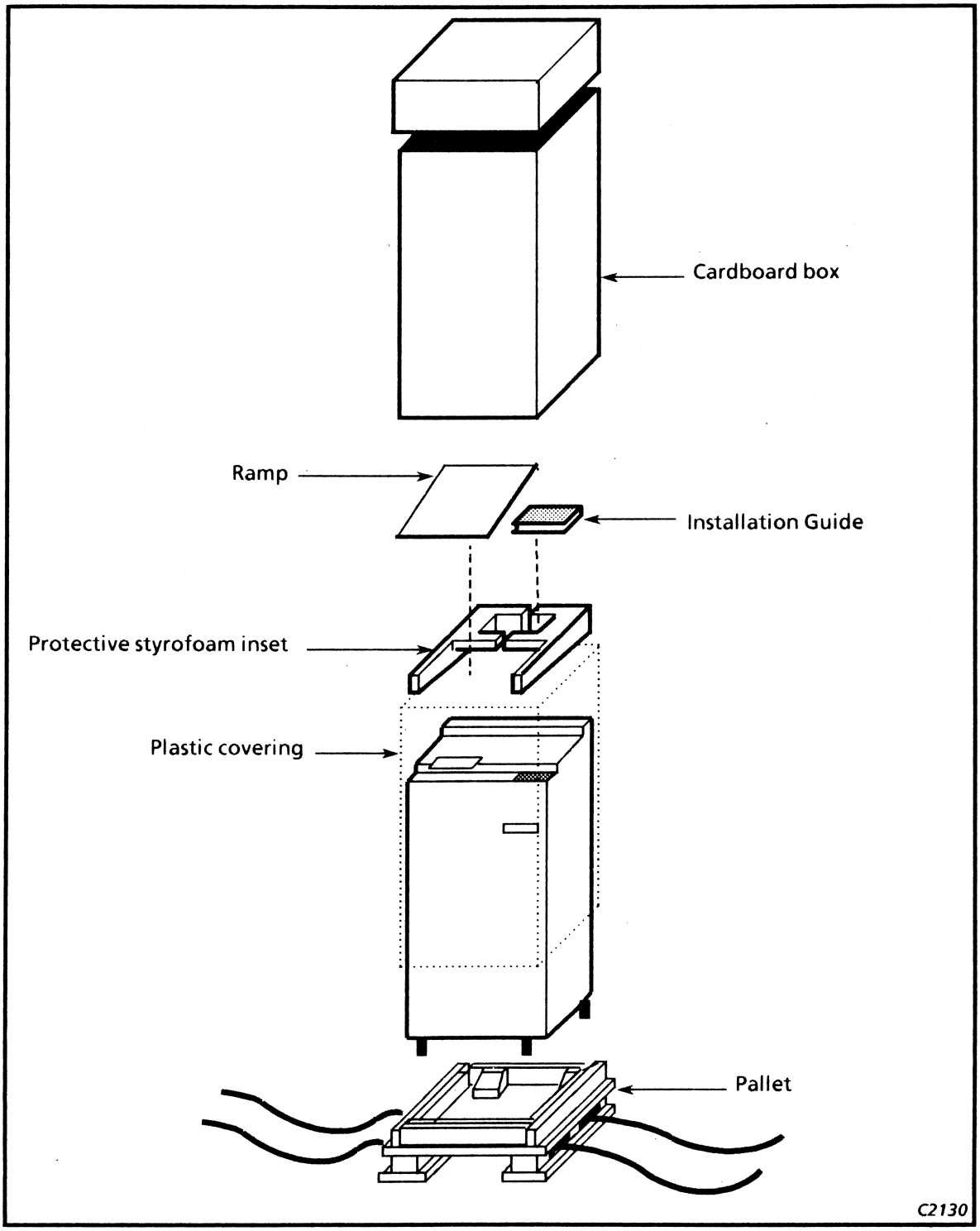
A copy of the CYBER 930 Computer System Installation Guide is packed with the mainframe. Box 1 which contains the mainframe, has an *Open First* label on the box lid.

Uncrating instructions on the shipping box of each cabinet give you directions on cutting the straps and removing the lid, ramp, and Installation Guides.

Work on one cabinet at a time, starting with Box 1. To unpack the cabinets:

- ☐ Remove the ramp and set it close by.
- ☐ Lift and set aside the protective styrofoam insets.
- ☐ Remove the cardboard box.
  - ☐ If the ceiling height is 3 m (10 ft) or more, with one installer at the front of the cabinet and the other at the back, carefully lift the cardboard box clear of the cabinet and set it aside.
  - ☐ If the ceiling height is less than 3 m (10 ft), simultaneously lift, tilt, and collapse the cardboard along the length of the cabinet or slant the box toward the back of the cabinet while lifting and setting aside.
  - ☐ If the customer plans to discard the packaging, carefully cut the cardboard vertically with a utility knife along any non-seam edge starting at the top corner.
- ☐ Lift the plastic covering off the cabinet.
- ☐ Repeat for each cabinet.
- ☐ Collect all shipping materials for storage or disposal as requested by the customer during the site readiness check.

Cabinet Packaging



Remove Each Cabinet from Its Pallet

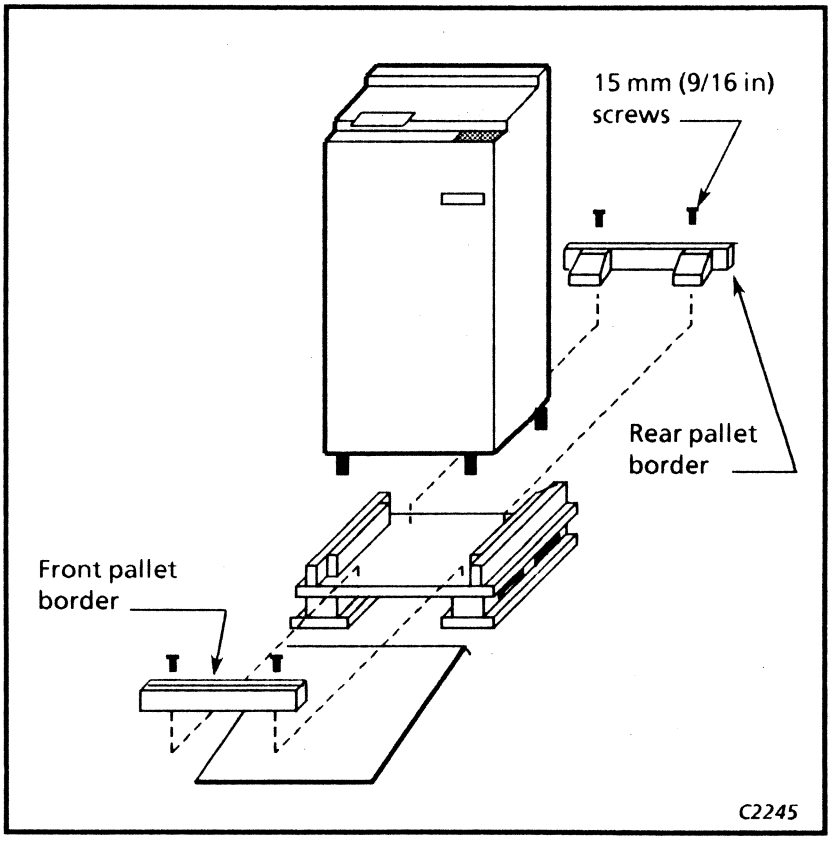
With one installer at the front of the cabinet and the other at the back, remove the cabinet from the pallet according to the following procedure. Repeat this procedure to remove the other cabinets from their pallets.

> **⚠ WARNING**
>
> Each cabinet weighs from 160 kg (350 lbs) to 364 kg (800 lbs). Removing cabinets from pallets requires **two** installers.
>
> If the floor is not level, the cabinet may roll off the pallet. Do **not** try to catch the cabinet if it begins to fall.

☐ Use a 15 mm (9/16 in) wrench to remove the screws from the front and back pallet borders.

☐ Remove and set aside the front and back pallet borders.

Removing Pallet Screws and Borders

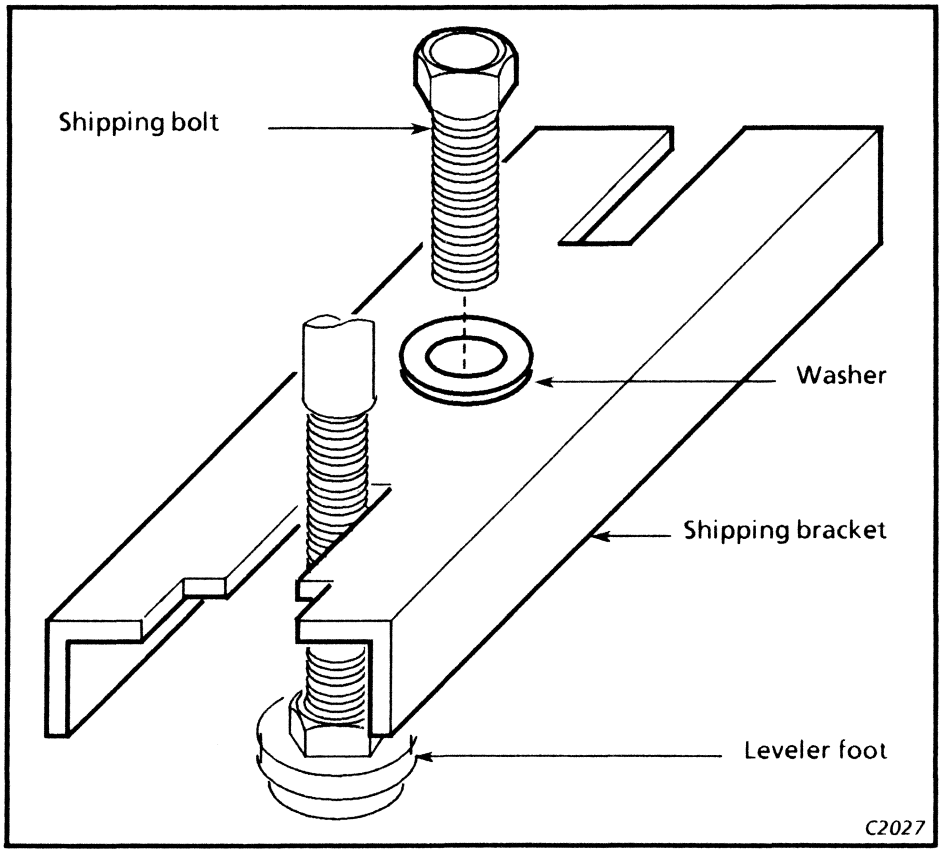


☐ Fit the metal guide plate on the wide edge of the ramp securely into the groove along the pallet deck at the back of the cabinet.

☐ Open the front door of the cabinet to reach the front bolts and brackets. Using a 15 mm (9/16 in) wrench, remove and set aside the shipping bolts and washers from the brackets that secure the cabinet to the pallet.

Make sure you close and lock the cabinet door before proceeding with the next step.

Removing the Shipping Bolt and Bracket



Remove Each Cabinet from Its Pallet

- ☐ Raise the leveler feet from their extended shipping position. The leveler feet should be high enough to ensure no interference occurs when you slide the cabinets from the pallet to the ramp and into position.

- ☐ To raise a leveler foot, use a 15 mm (9/16 in) wrench on the hexnut adjacent to the top of the leveler foot. (You can also turn the shipping bracket over and use the right side as your wrench).

- ☐ Do not tighten the leveler feet when you raise them. After the cabinet is off the pallet and in position, you will have to extend the leveler feet.

- ☐ Check that the cabinet doors are closed and locked.

> ⚠ **WARNING**
>
> Each cabinet weighs from 160 kg (350 lbs) to 364 kg (800 lbs). Removing cabinets from pallets requires **two** installers.
>
> If the floor is not level, the cabinet may roll off the pallet. Do **not** try to catch the cabinet if it begins to fall.

- ☐ Rear first, carefully slide the cabinet off the pallet and down the secured ramp. To guide the cabinet off the ramp, one installer should be in front of the cabinet and the other behind the cabinet.

- ☐ The cabinets cannot be moved up or down an incline steeper than ten degrees. The ramp supplied complies with this specification.

- ☐ Place the cabinet into position.

  Do not be concerned about placing the cabinets in the exact floor plan position until later.

- ☐ Set the pallet and ramp aside and out of your working area.

- ☐ Repeat the procedure for each cabinet.

Unpack the Console and Miscellaneous Boxes

The console and miscellaneous items may be packed separately or in one box. If you both unpack the miscellaneous boxes together, you both know where to find cables, manuals, tapes, and floppy diskettes as you need them.

Usually, by this stage of installation you know what extender cables are needed. If the required extender cables were either not delivered or not ordered, call your Engineering Services branch manager or engineer-in charge.

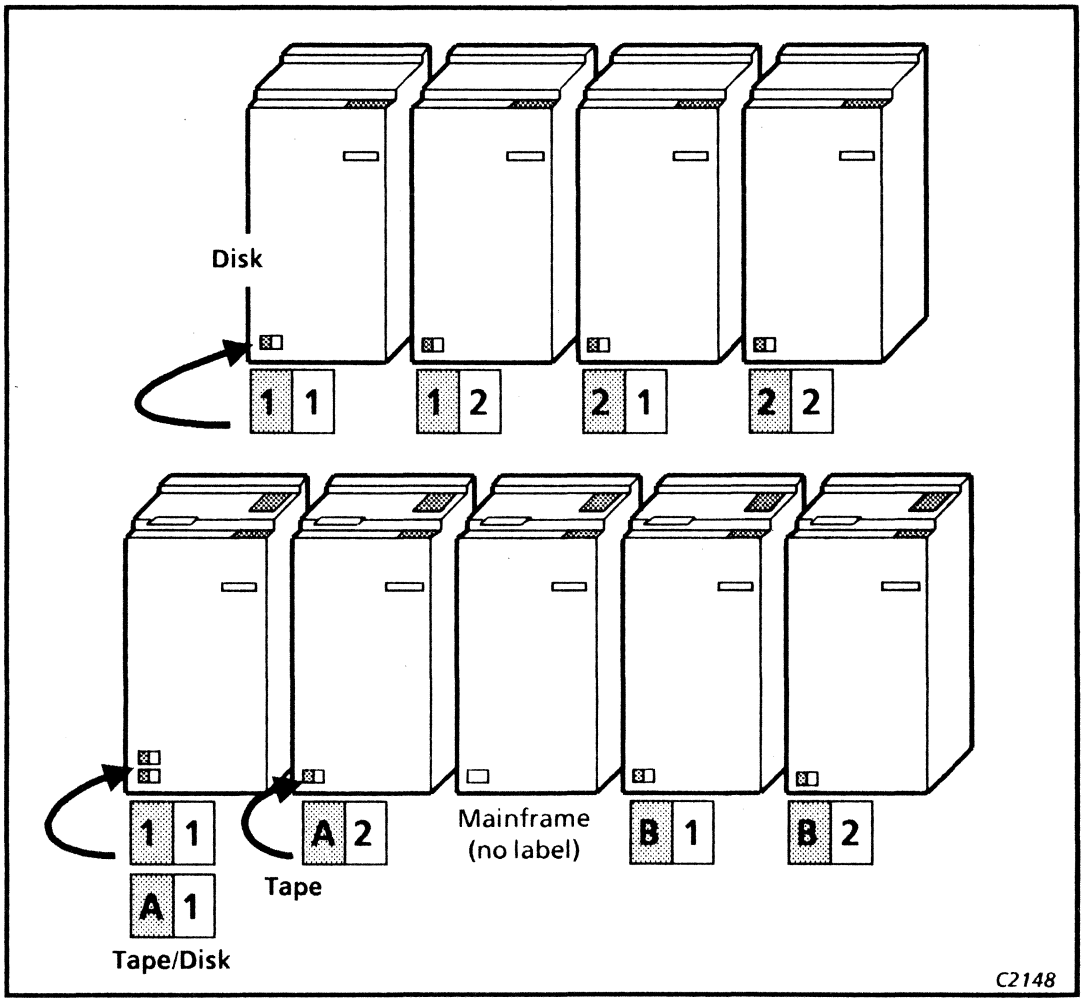
- ☐ Unpack and position the console.
- ☐ Place the Remote Technical Assistance modem next to the console.
- ☐ Place the console keypad overlay on the keyboard.

Position the Cabinets

With all the cabinets uncrated, and the packaging removed from your working area, position the cabinets according to the customer's floor plan.

When the cabinets are in their final position but before leveling and cabling the cabinets, ask the customer to verify that the layout is correct.

Positioning by Cabinet Identifier Labels



Level the Cabinets

Each CYBER 930 cabinet has four leveler feet: one at each corner.

A spirit level is not required to level the cabinets. The cabinets are level when they cannot be moved out of position. Once extended, the leveler feet prevent the castors from readily moving the cabinets.

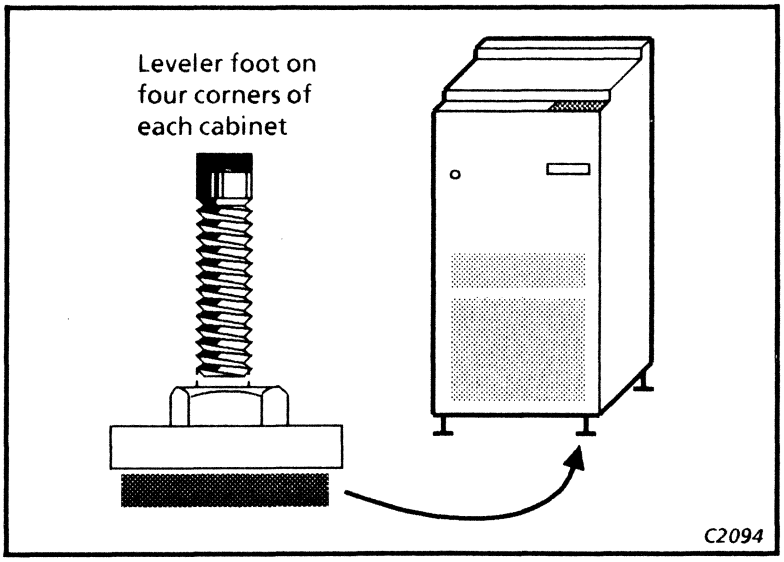
To extend the leveler feet into position:

- ☐ Use a 15 mm (9/16 in) wrench to turn the hexnut adjacent to the top of a leveler foot clockwise. The leveler shaft extends as you turn the hexnut.

  The installer at the front of the cabinet may find it easier to lower the leveler feet with the front door open.

- ☐ After you secure all four leveler feet, the cabinet should not move.

Cabinet Leveler Feet



Position the Console

Position the console according to the customer's floor plan. If the console is placed on the same table as the Device Interface cabinet of the CDCNET, the console and the Device Interface cabinet must be three feet apart.

NOTE

If the console is placed near the Device Interface cabinet, the power supply in the Device Interface cabinet causes interference to the console displays.

Section 5
Connecting the CYBER 930 Computer System

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Cable Management Strategies

When installing a CYBER 930 Computer System, you make the following three kinds of connections:

- ☐ Signal cables
- ☐ Power control cables
- ☐ Power cords

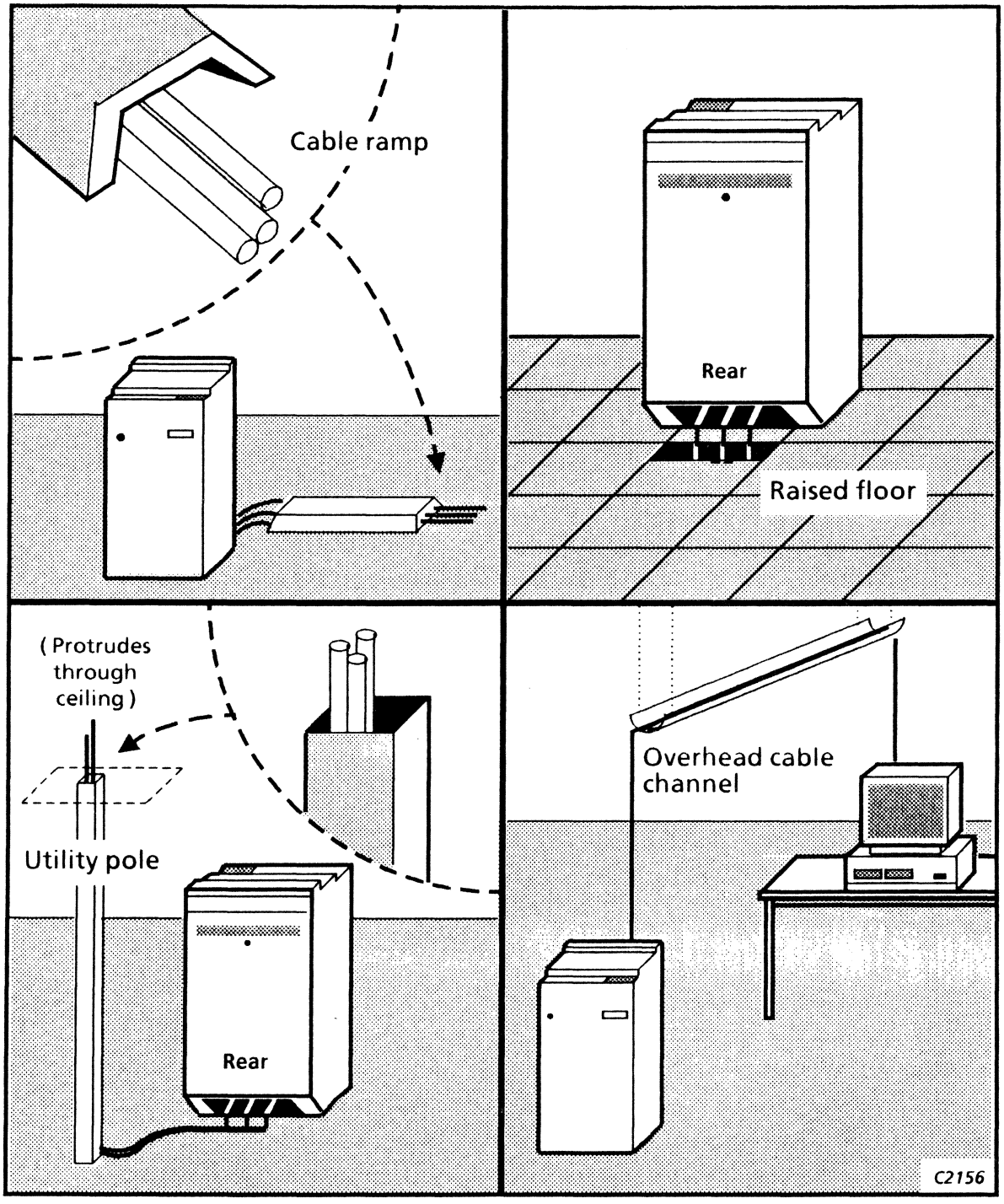
Secure and tighten all cable connections. You must check all internal connections that were made before installation.

Cables are not interchangeable: use only those cables specified for each function.

If the customer has requested cables routed under a raised floor or through a utility pole, take that into account when you cable the system. The customer can have the following cable management strategies:

- ☐ Cable ramp
- ☐ Raised floor
- ☐ Utility pole
- ☐ Overhead cable channel

Cable Management Strategies

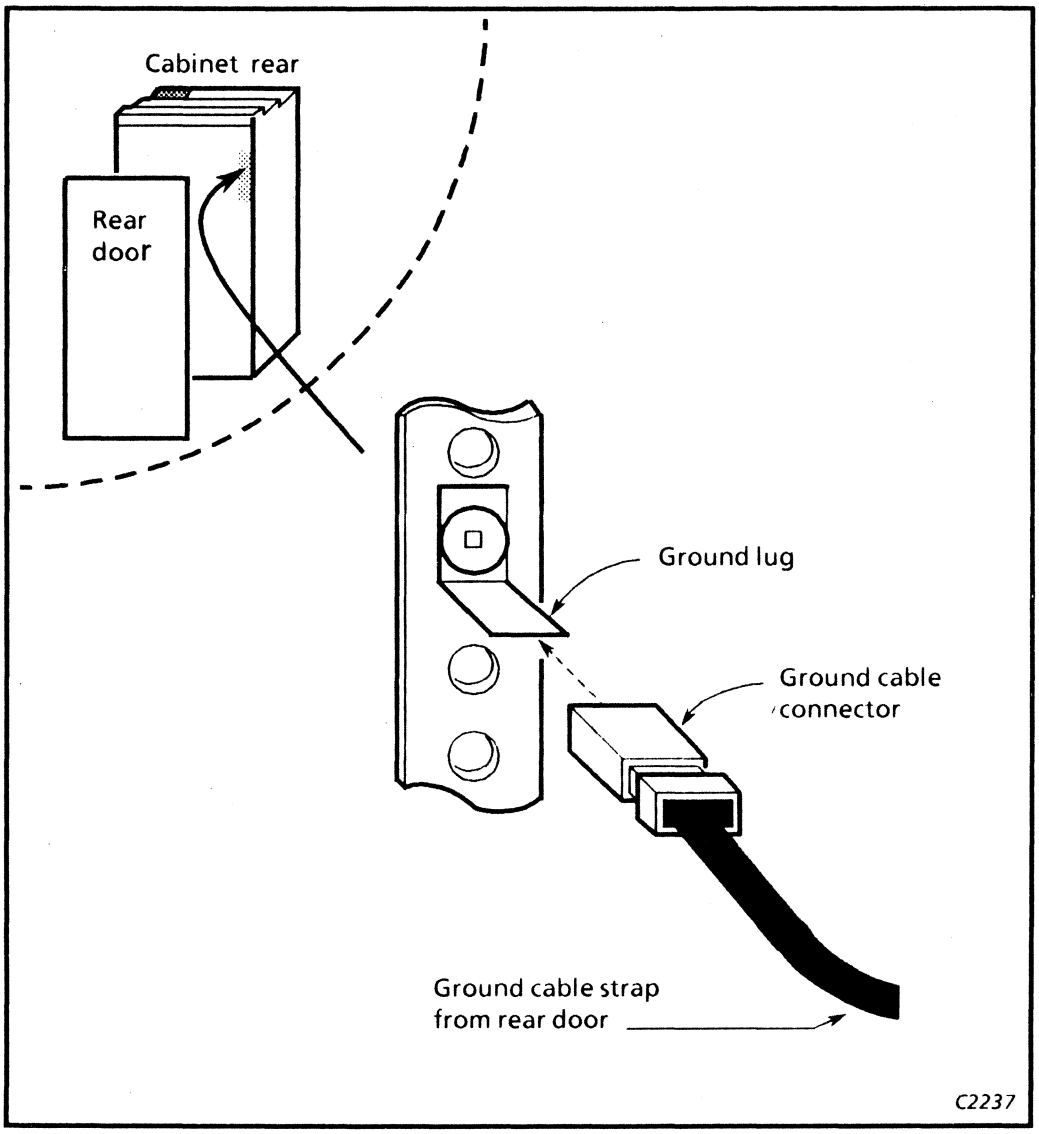


Open and Remove the Rear Door of the Cabinet

The rear door of each cabinet has a locking mechanism that requires a hexdriver or hex key to lock or unlock the door. Open and remove the rear door as follows:

- ☐ Insert a 4-mm (5/32 in) hexdriver or hex key in the latch lock and turn the hexdriver or hex key counterclockwise.
- ☐ Tilt the door back and pull the ground cable strap out at the right side of the frame of the cabinet.
- ☐ Lift the door to remove it from the cabinet.
- ☐ Set the rear door aside.
- ☐ Repeat for each cabinet.

Removing the Ground Cable Strap of the Rear Door



Power Safety Checks

Check the Power Supplied

The voltages supplied to power receptacles must comply with the specifications in the CYBER 930 Customer Planning Guide [Control Data publication 60469520].

☐ With a volt meter, check all live/neutral/ground measurements of all power outlets.

Check for All Power Off

Before you cable the system, make sure all power control switches are set to off. Refer to the figure opposite to check the mainframe, disk, and tape/disk cabinets. If you are also installing other equipment, such as Expanded Module Drives or CYBER 170 peripherals, make sure that their power control switches are set to off.

In each cabinet,verify:

☐ The main breaker is OFF;

☐ The battery charger is OFF;

☐ The power cord is unplugged.

☐ The service switch is set to OFF. The service switch is a three-position, pull-out, and toggle switch. It is difficult to see because the metal operator safety guard plate attached to the top of the AC rack obstructs your view. You may find the switch easier to reach by approaching it from the cable trough and reaching up carefully.

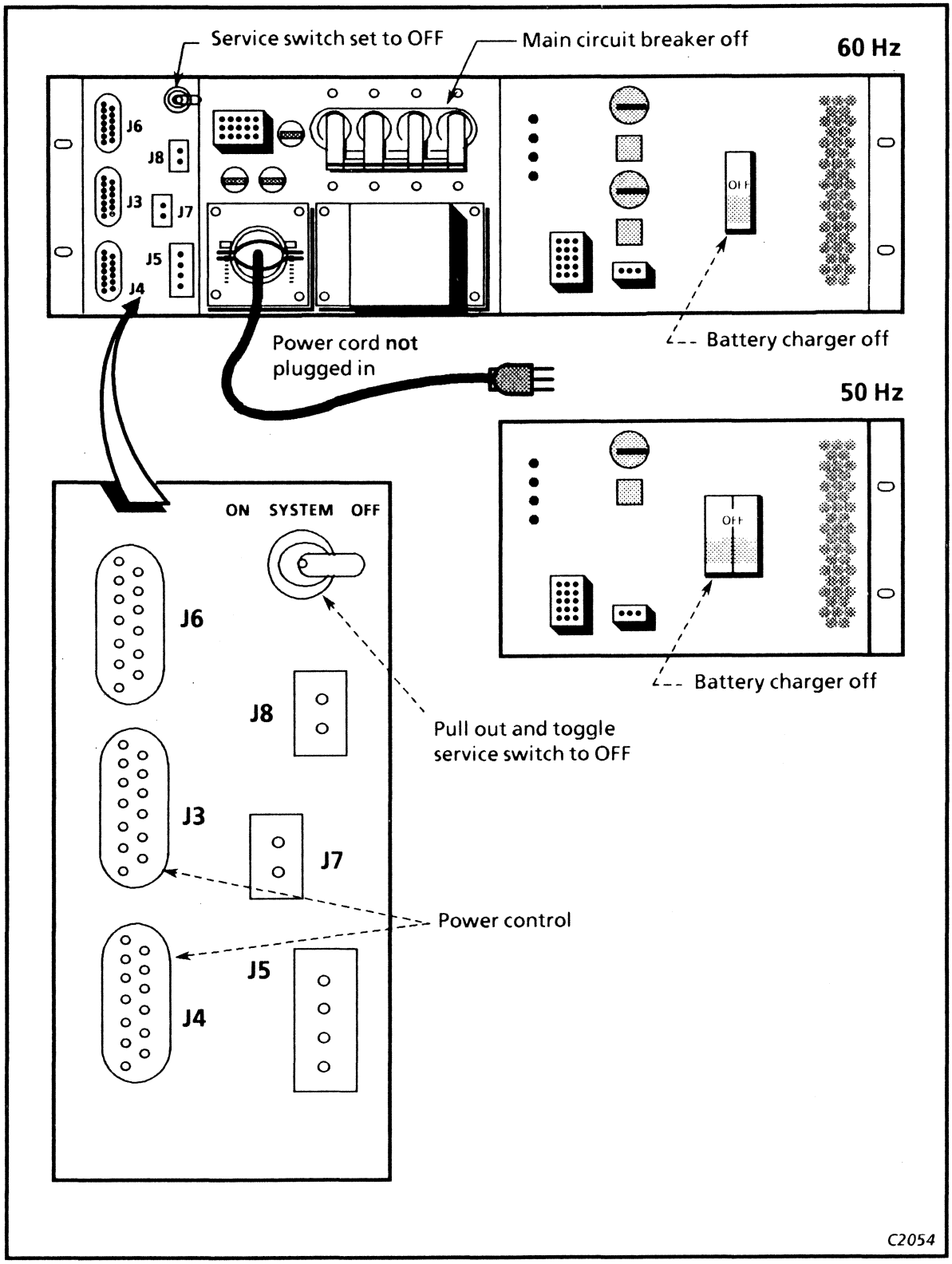
To set the service switch to OFF, pull the switch out gently and toggle to the right position.

The figure opposite shows neither the operator safety guard plate nor the complete cabling of the AC distribution rack.

⚠ WARNING

Power in all cabinets must be OFF before you begin cabling.

Power Off in AC Distribution Rack (60 Hz and 50 Hz)



Cabling Guidelines

Cabling the System

As you cable the system, *secure* all connections and *tighten* all retention screws.

Remember that cables are **not** interchangeable. Use only the cables that are specified for each function.

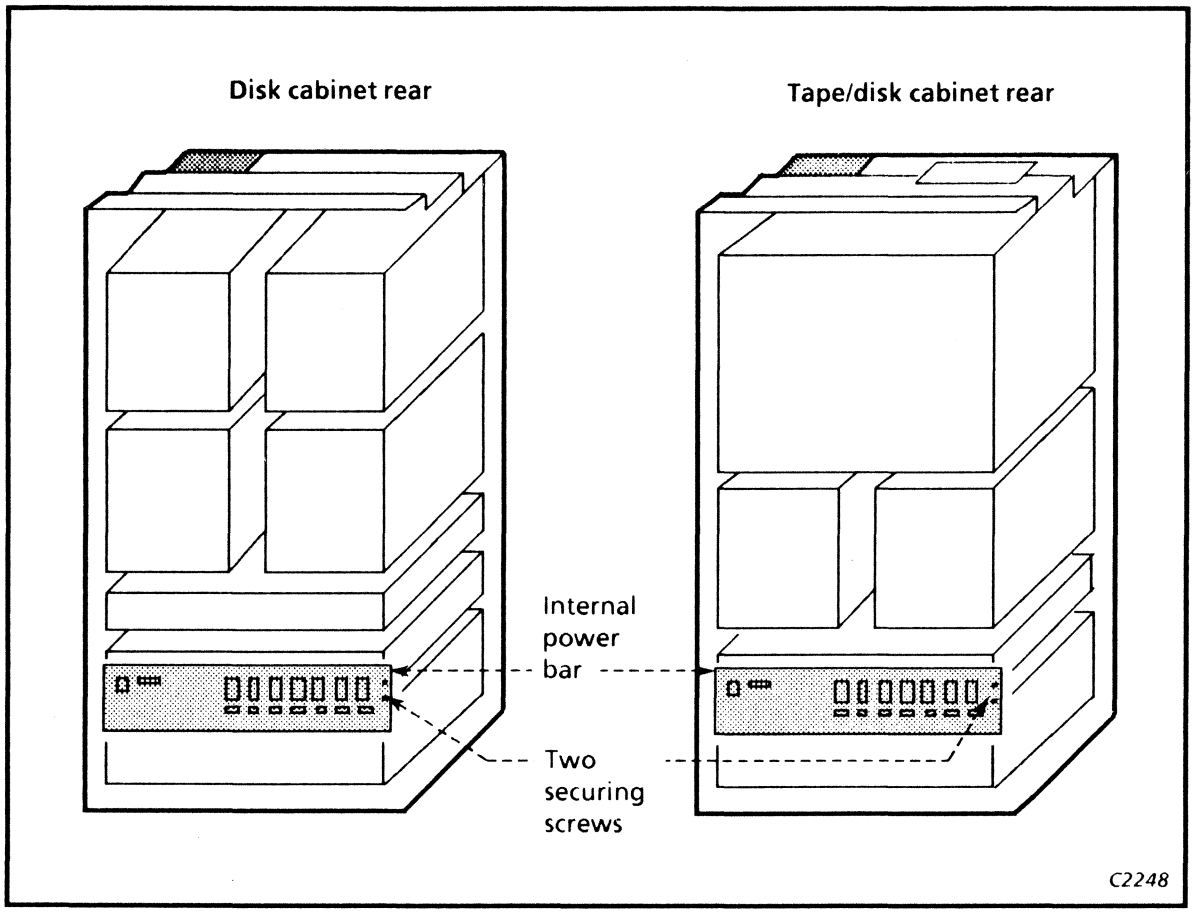
Moving the Internal Power Bar

Because most cable connections are accessible, you can tighten them easily. In the disk and tape/disk cabinets, however, the internal power bar partially blocks access to the control module signal cables.

To access the control module signal cables, remove the internal power bar as follows:

- ☐ Locate the two screws that secure the internal power bar to the right side of the cabinet frame.
- ☐ Remove the two screws by using a T25 Torx screwdriver.
- ☐ While holding the free end of the power bar, carefully move the power bar from the right to the left side of the cabinet.
- ☐ Secure the cable connectors.
- ☐ Return the power bar to its original position, and replace and tighten the two securing screws.
- ☐ Push all AC and DC plugs into place to ensure good contact with their receptacles.

Internal Power Bar



Signal Cables

Before connecting the signal cables:

- ☐ Remove the completed cable configuration map from the pocket inside the front door of the mainframe.
- ☐ The peripheral cabinet identifiers shown on the cable map provide connectivity information. Check the identification label on the lower front of the door of each peripheral cabinet against the cable map. If you remove the rear door, you will see a duplicate identification label on the top right label plate.

Working with the Cable Configuration Map

Inside the front door pocket are:

- ☐ Three copies of the completed cable configuration map
- ☐ Two blank cable configuration maps.

A blank cable map on the page opposite shows the following:

- ☐ Mainframe connection in the left column. Channel designations are in the right column.

  Both decimal and octal channel information is provided for your convenience. NOS/VE recognizes decimal channels; the CYBER 930 uses octal channels. The octal channel designations are marked on the mainframe bulkead.

- ☐ Devices connected to one another are in a row across the form. The first cabinet in the row is connected dirctly to the mainframe.

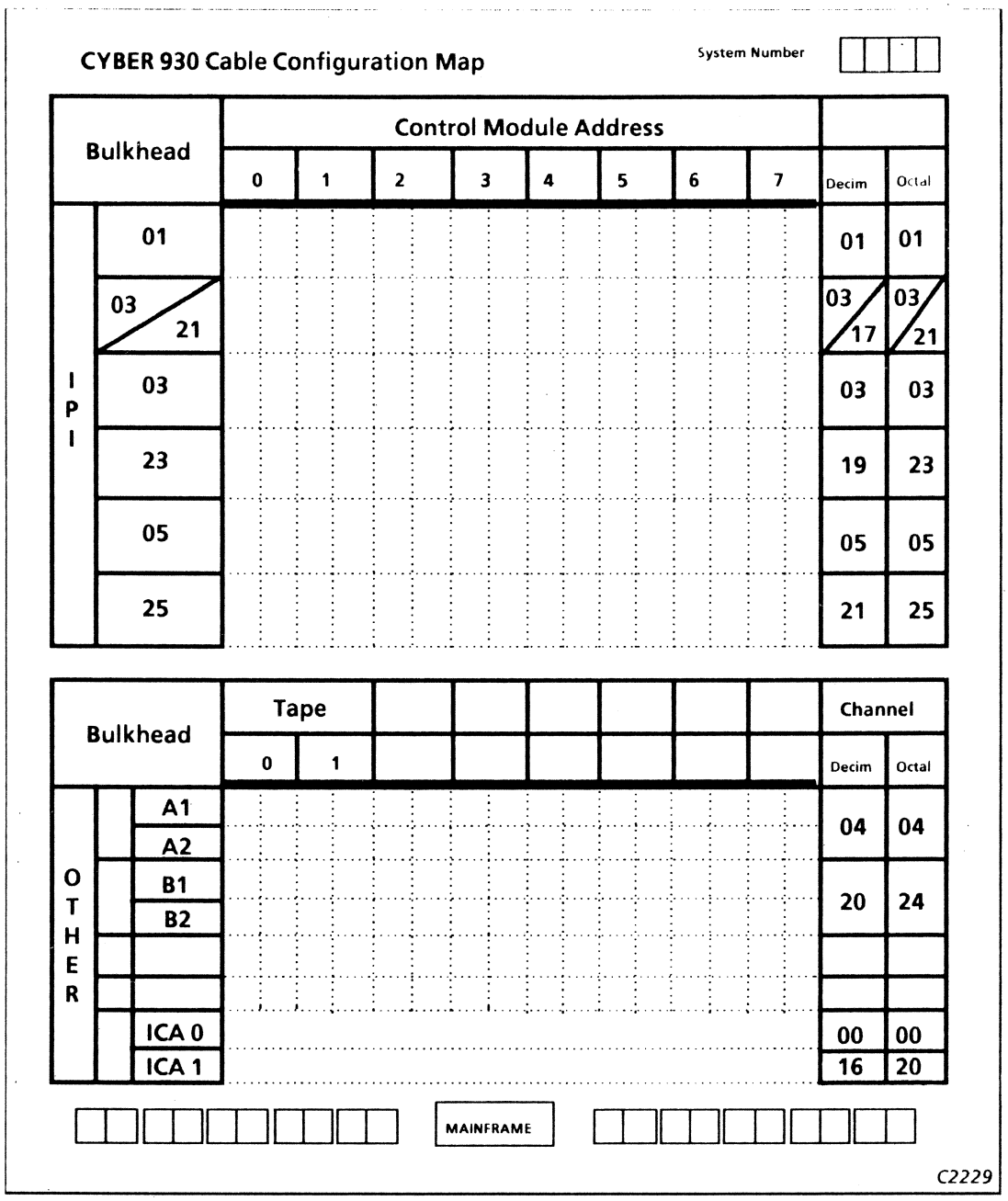
  If you must change the configuration, use one of the blank cable maps. Upgrades can be added to the original cable map supplied.

- ☐ Each peripheral cabinet in the system is on the cable configuration map.

- ☐ Usually, the only portion of the cable map you fill in during installation is the power control section at the bottom of the form. For more information on this topic, refer to Power Control Cable section in this section.

- ☐ After completing the cable configuration map, give one copy to the customer, one to the engineer-in-charge, and leave one inside the front door pocket of the mainframe.

CYBER 930 Cable Configuration Map

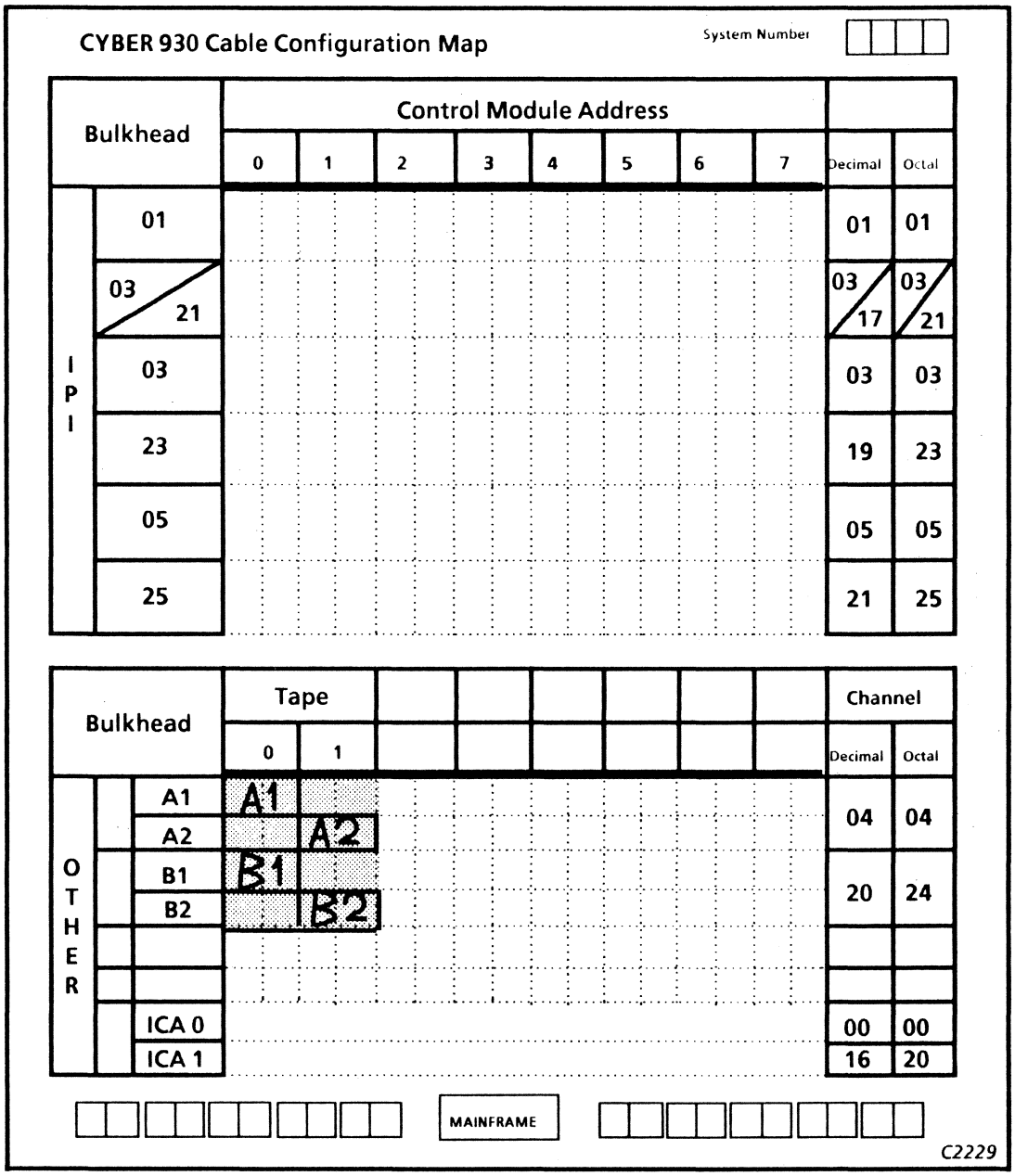


Tape Cabinets

Each tape signal cable has an identification sticker on both ends of the connector which corresponds to the tape identification label; for example, TAPE A1 or TAPE B2.

The following example of a cable map shows the maximum number of tape cabinets available on a 930 system. The cable map shows that both tapes A1 and A2 are connected to channel 04 (panel A) and tapes B1 and B2 are connected to channel 20 (panel B) of the mainframe.

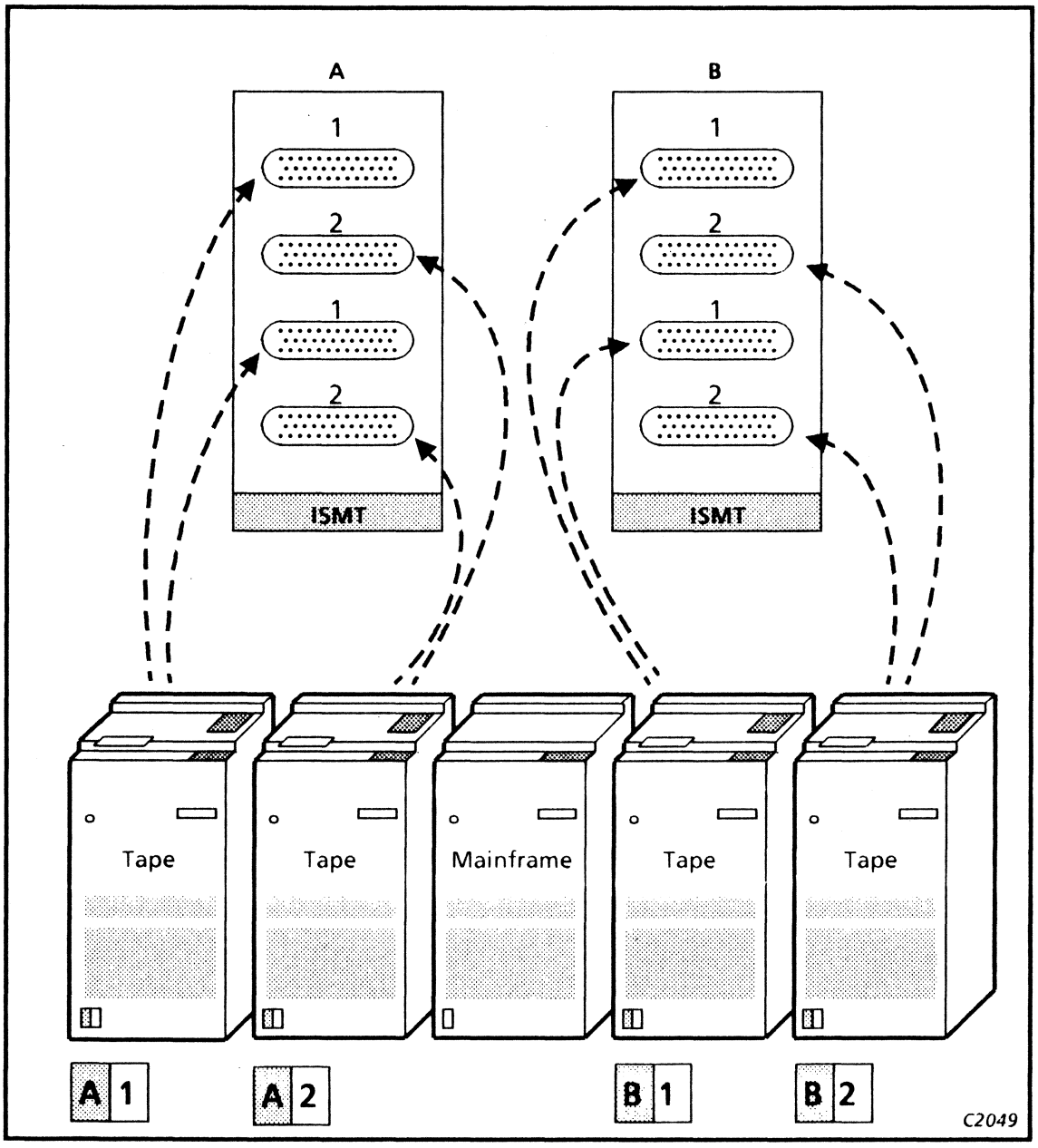
Cable Configuration Map -- Tape Cabinet



To connect the tape signal cables to the mainframe:

- ☐ Connect the two signal cables that labelled TAPE A1 to bulkhead panel **A** locations **1** as shown in the figure below.
- ☐ Connect the two signal cables that labelled TAPE A2 to bulkhead panel **A** locations **2**.
- ☐ Connect TAPE B1 and B2 to bulkhead panel **B** the same way as TAPEs A1 and A2.

Connecting Tape Cabinet Signal Cables to the Bulkhead



Disk Cabinets

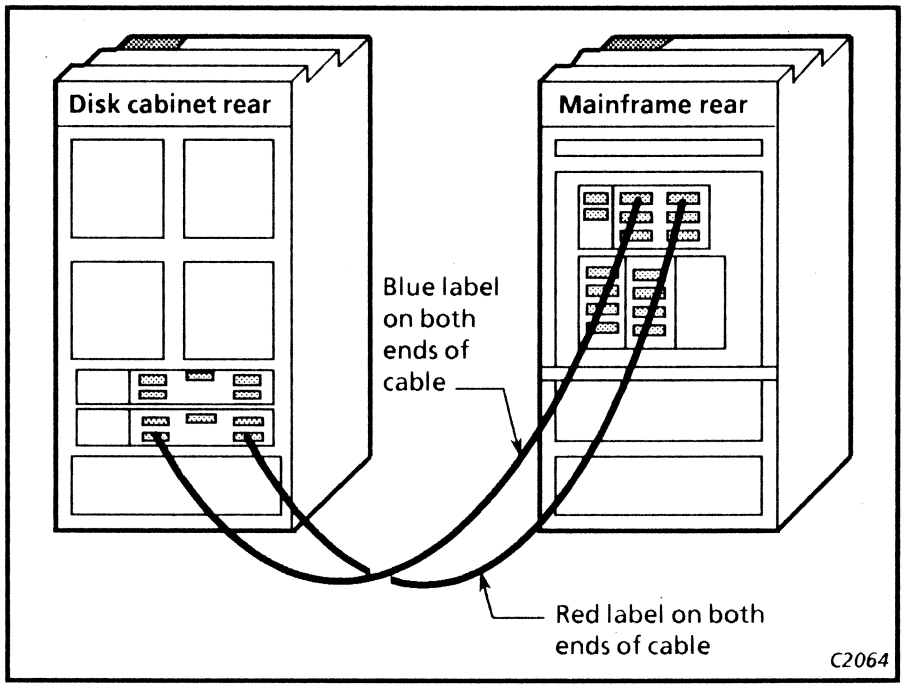
In addition to the 9836 Disk Subsystem, customers may purchase the 9853 Disk Storage Subsystem as a substitute or additional disk subsystem. Connecting the signal cables and creating disk strings are the same for both kinds of disks.

Each disk cabinet has two signal cables--one with red labels and one with blue labels. You can identify the specific disk cabinet by a cabinet identifier label that is on both the cabinet front door and on the inside rear of the cabinet on the top right label plate.

- ☐ In small 930 systems, connect only one disk cabinet to each pair of intelligent peripheral interface (IPI) channel connectors on the mainframe bulkhead as shown below. For the additional cabinets in larger 930 systems, refer to Disk Strings, which follows.

- ☐ If the customer has ordered optional extender cables, identify on the floor plan the specific disk cabinets that require optional length cables. Attach an extender cable directly to the unattached end of each of the signal cables from each specific disk cabinet.

Connecting Disk Cabinet Signal Cables to IPI Channels



☐ Make sure that the extender cables are labeled at both ends with the same color (red or blue) as the signal cables to which you attach them. Refer to the color label sheet in the inside pocket of the front door of mainframe cabinet.

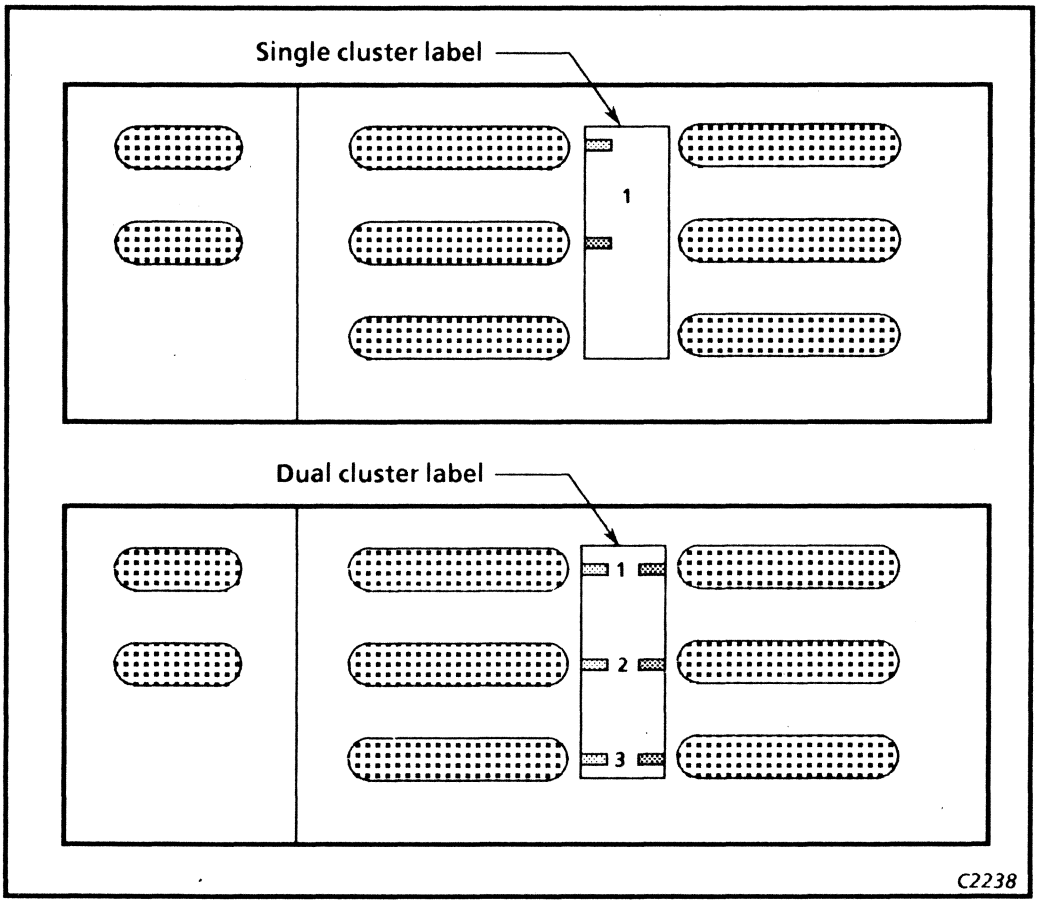
☐ Route the cables through the cabinet side openings as you connect one cabinet to the next.

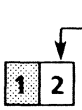
Read the label between the IPI channel connections on the bulkhead to identify the channels to be used. You will see one of two labels: one for single cluster systems, or one for dual cluster systems. Both kinds of labels are shown below.

1 1 Connect the red and blue cables as shown on the bulkhead label. The number in the middle of that label corresponds to the **first number** in the identifier label: this is the string number.

Connect the signal cables from the cabinet to the two connectors beside the string number on the label so that the color of the cable labels matches the bulkhead label.

Bulkhead IPI Labels

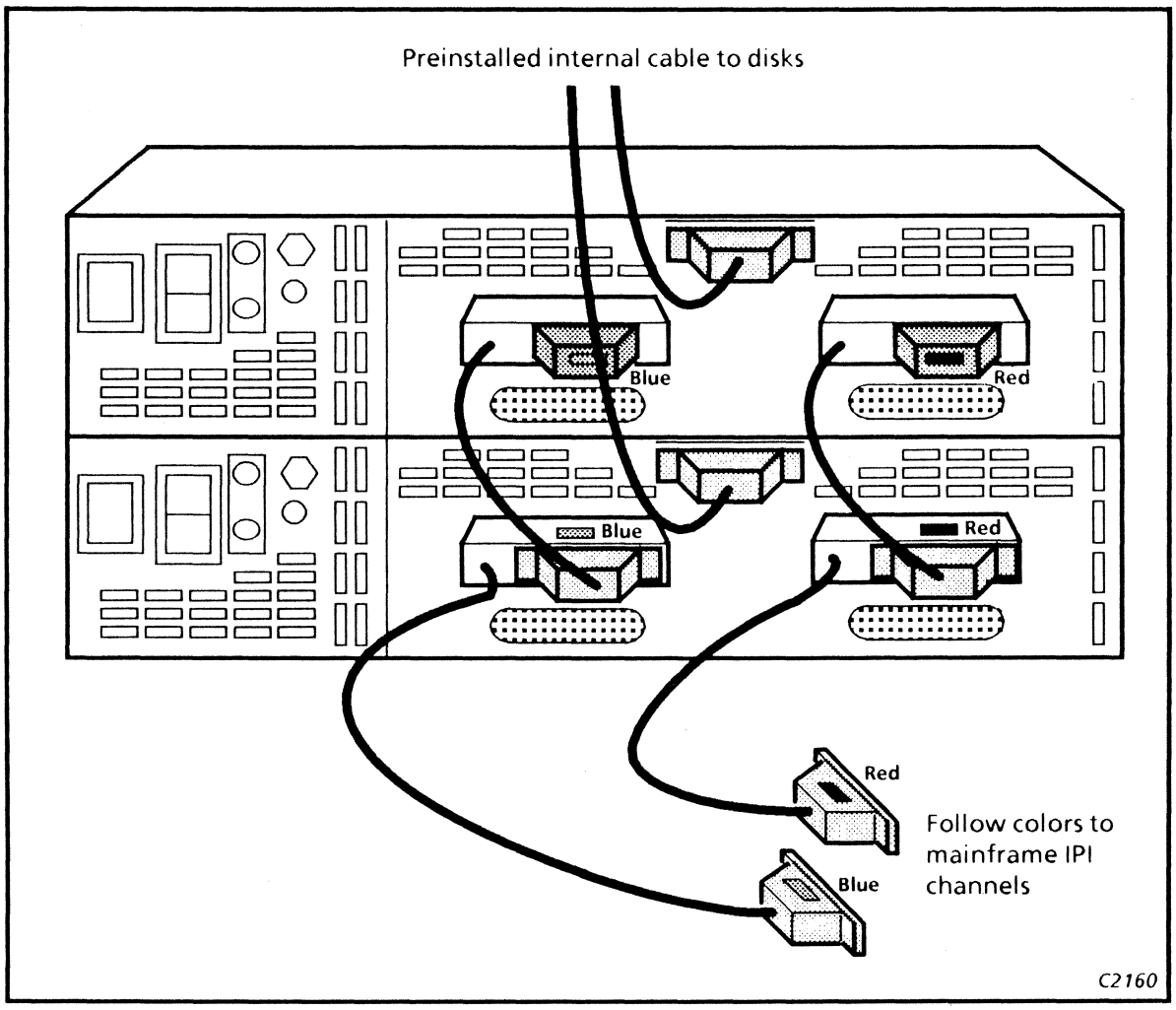




The **second number** on the identifier label is the cabinet number within a string. All disk cabinets connected directly to the mainframe have an *x*1 identifier label; that is, an 1 as the second number in their identifier.

Check the configuration with the cable configuration map. The left part of the map corresponds to the connectors on the mainframe bulkhead. Each filled-in box on the middle part of the map represents a cabinet; the numbers in each box correspond to the identifier label on the front door of the cabinet .

Connecting Disk Signal Cables to the Mainframe IPI Channels



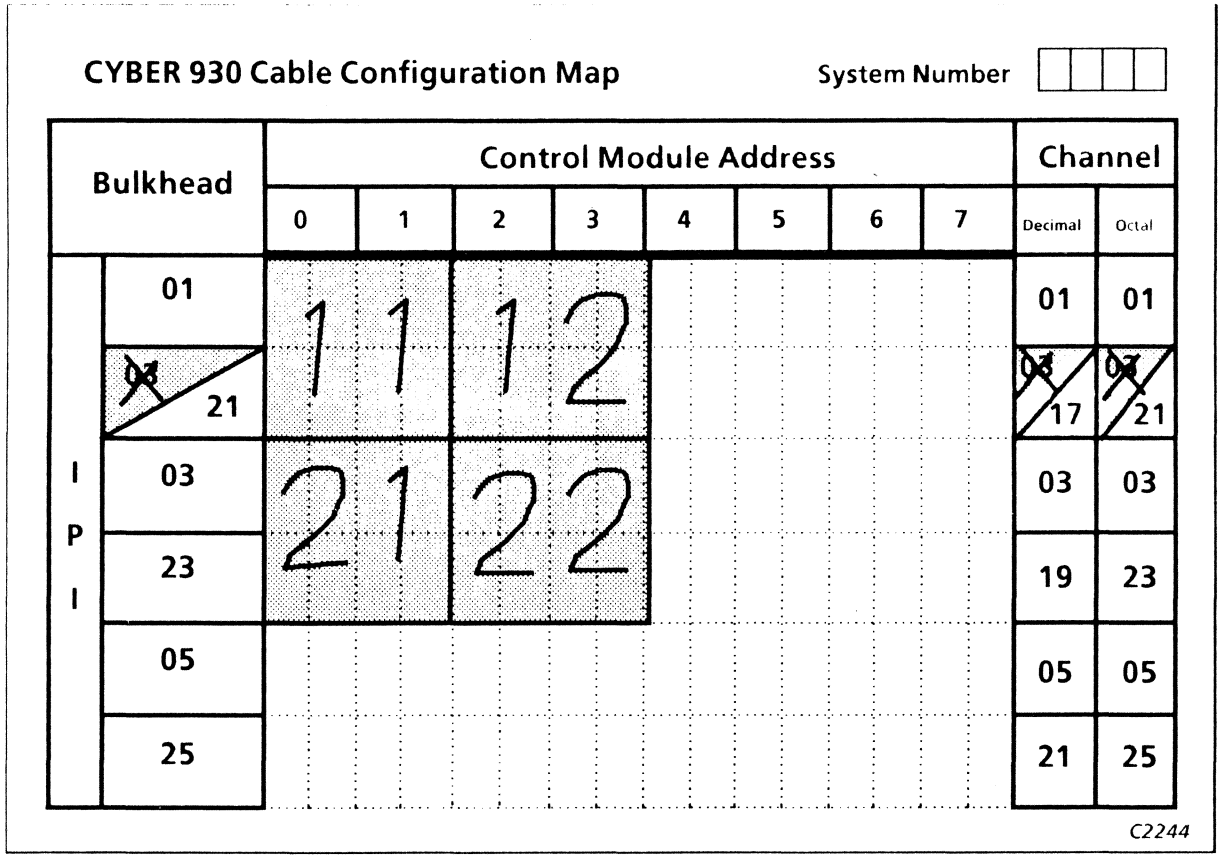
Disk Strings

A disk string is a group of disk cabinets interconnected by their signal cables in a daisy-chain fashion as shown in section 1. Only one disk cabinet in a string is connected directly to the mainframe; the others are daisy chained to it.

The first cabinet in a disk string is connected to the mainframe as described in the previous section on disk cabinets. Subsequent cabinets in the same disk string are connected to the previous cabinet in an order determined by the cabinet number. For example, cabinet **1 1** is the first cabinet in disk string one. Cabinet **1 2** is connected to cabinet **1 1** cabinet **1 3** is connected to cabinet **1 2**.

A disk string is represented as a horizontal row on the cable configuration map shown below. This example shows a dual cluster system with four disk cabinets, configured in two strings. By refering to the cable map, you can tell cabinets **1 1** and **2 1** are connected directly to the mainframe. Cabinet **1 2** is connected to cabinet **1 1** and cabinet **2 2** is connected to cabinet **2 1**.

Cable Configuration Map - Disk Cabinet



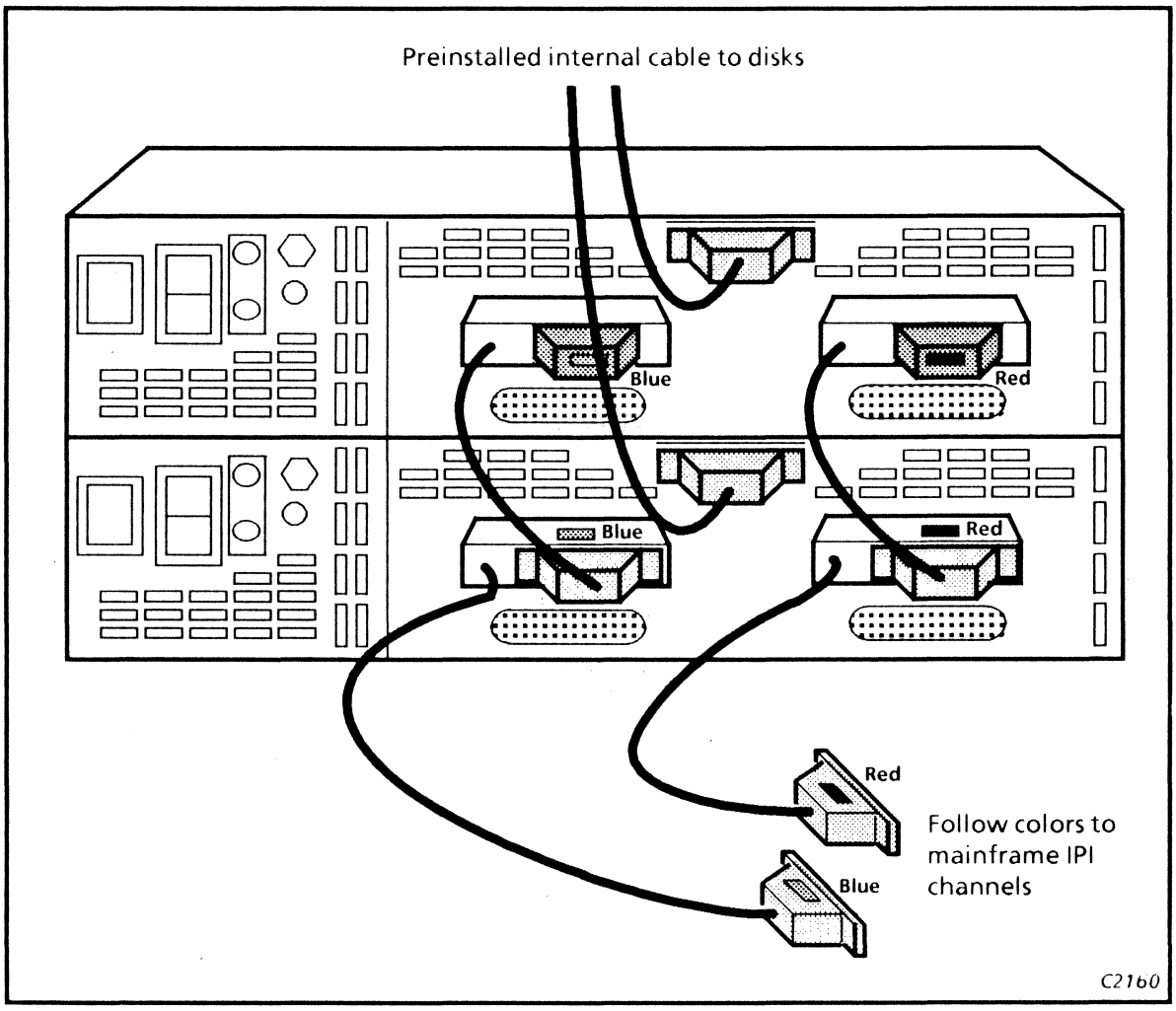
A disk string can also include tape/disk cabinets. Cable these in the same way as the disk cabinets by using the information from the disk portion of their identifier labels.

Before you begin cabling, review the following figures that show how to connect a disk cabinet to the mainframe and how to daisy chain disk cabinets.

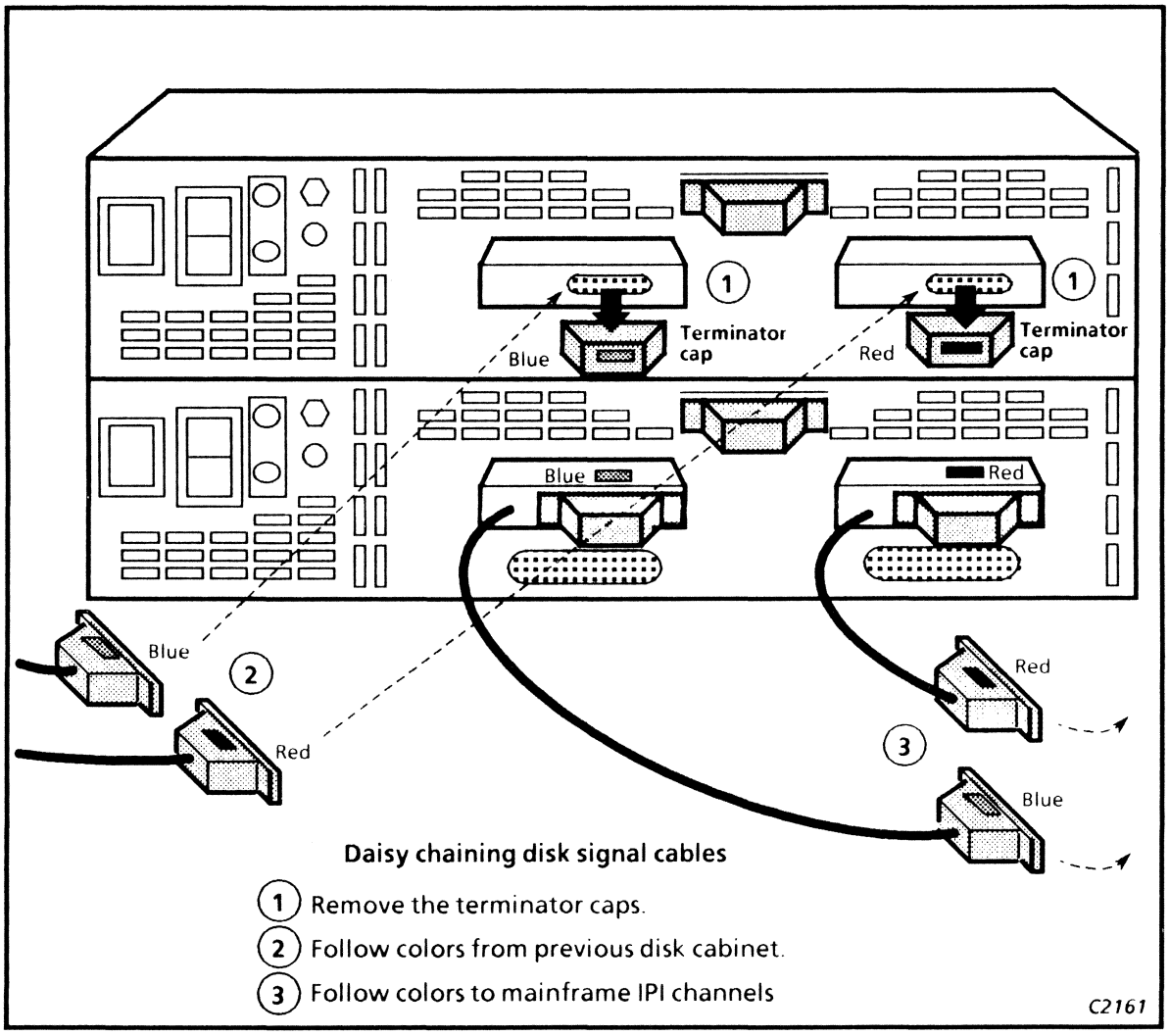
Ensure that the signal cables from a subsequent cabinet that have a red or blue label on it are connected to the cable with same color label in the previous cabinet.

Check the configuration of all the strings with the cable configuration map.

Connecting Disk Signal Cables to the Mainframe IPI Channels



Creating Disk Strings



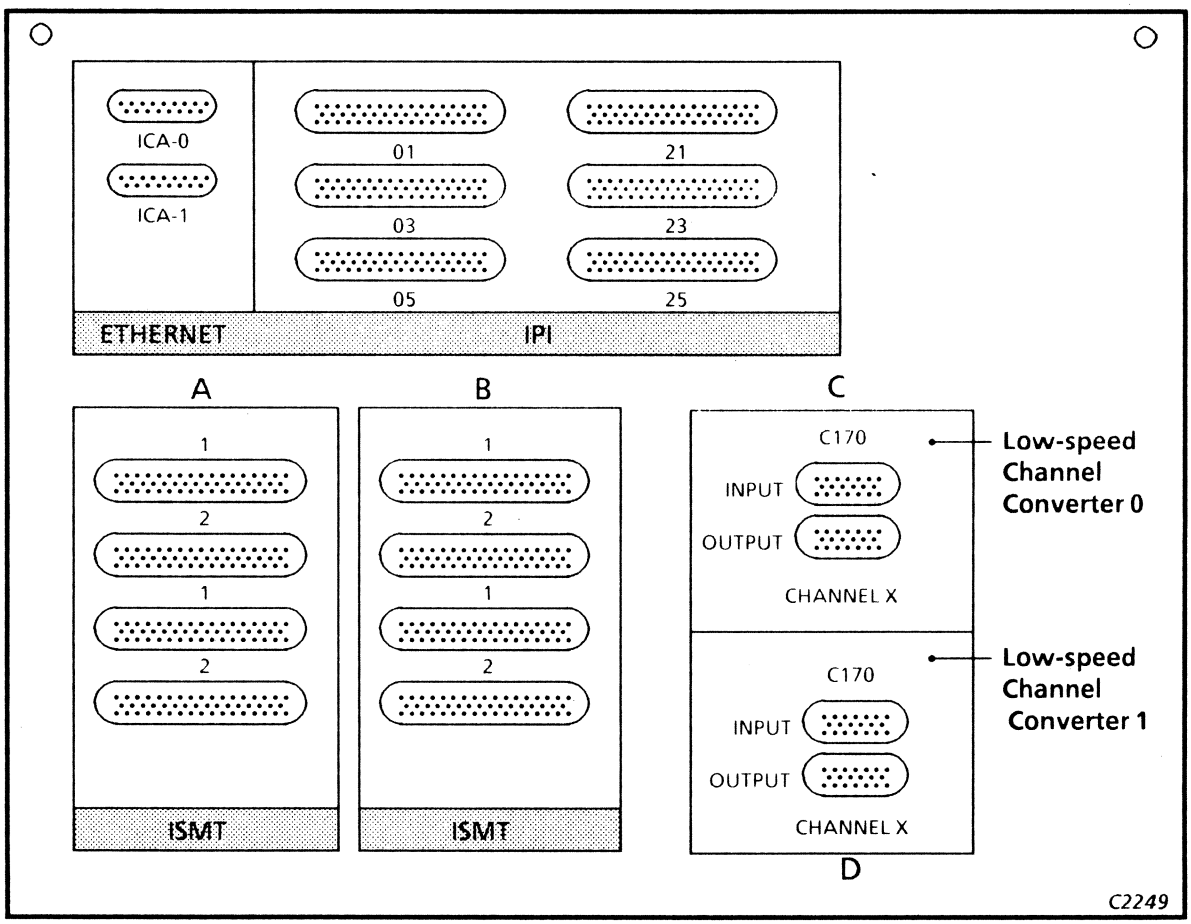
Tape/Disk Cabinet

- ☐ Read the tape and disk identifier labels on the front door of the cabinet for connectivity information.
- ☐ Connect signal cables for the tape as you would for a tape cabinet.
- ☐ Connect disk signal cables as you would for a disk cabinet.
- ☐ If the tape/disk cabinet has extender cables, attach them to the disk signal cables only.

CYBER 170 Peripheral

- ☐ Connect both signal cables of the CYBER 170 peripheral directly to the low-speed channel converter plate C or D on the mainframe bulkhead shown on the cable configuration map.

Low-speed Channel Converter Plate



☐ If the CYBER 170 peripherals are already on site, use the blue labels from the 930 Label Kit to identify the cabinets.

☐ You may need to complete the cable map. Because a customer may want to install CYBER 170 peripherals already on their premises, some information may be missing.

The location of CYBER 170 peripheral information on the cable configuration map is shown below.

CYBER 930 Cable Configuration Map System Number ☐☐☐☐

Bulkhead		Control Module Address 0	1	2	3	4	5	6	7	Decim	Octal
IPI	01									01	01
	03/21									03/17	03/21
	03									03	03
	23									19	23
	05									05	05
	25									21	25

Bulkhead		Tape 0	1							Channel Decim	Octal
OTHER	A1									04	04
	A2										
	B1									20	24
	B2										
	170									02	02
	170									18	22
	ICA 0									00	00
	ICA 1									16	20

☐☐ ☐☐ ☐☐ ☐☐ ☐☐ MAINFRAME ☐☐ ☐☐ ☐☐ ☐☐ ☐☐ ☐☐

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Power Control Cables

Power control cables send power signals from the mainframe to disk cabinets and the disk part of the tape/disk cabinet.

Disk and tape/disk cabinets are shipped with a power control cable attached at one end. All power control cables are identified by a *Power Control* sticker. The mainframe is shipped with no power control cables attached.

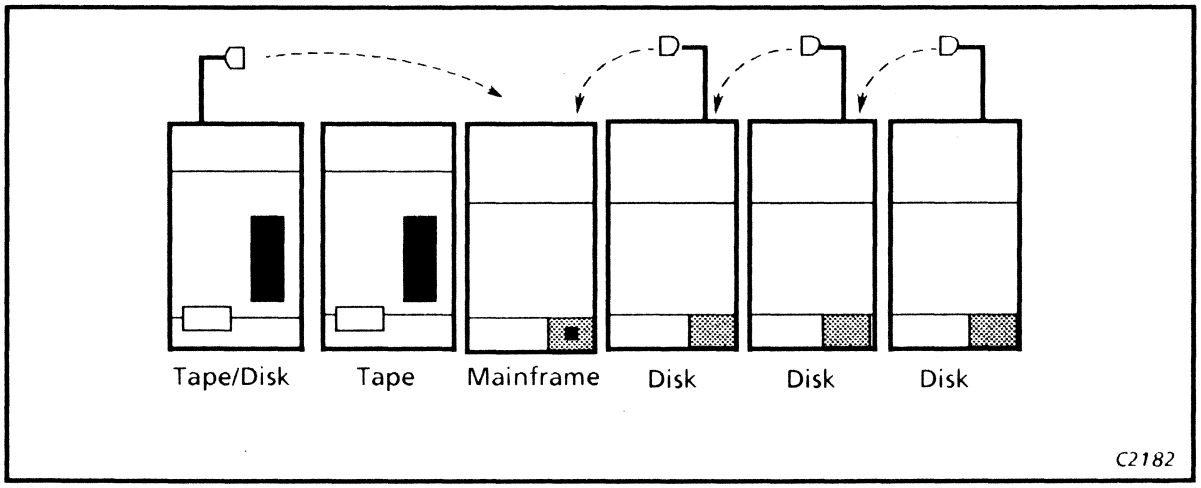
Power Control Strings

Connect power control cables from the mainframe to the disk and tape/disk cabinets in either one or two strings as shown in the illustration. Connect the first cabinet in a power control string directly to the mainframe. Connect all other cabinets in that string, one to the next.

Except for the 9639 Tape Subsystems, 9853 Disk Storage Subsystem, and CYBER 170 peripherals, connect all disk and tape/disk cabinets in the system to a power control string.

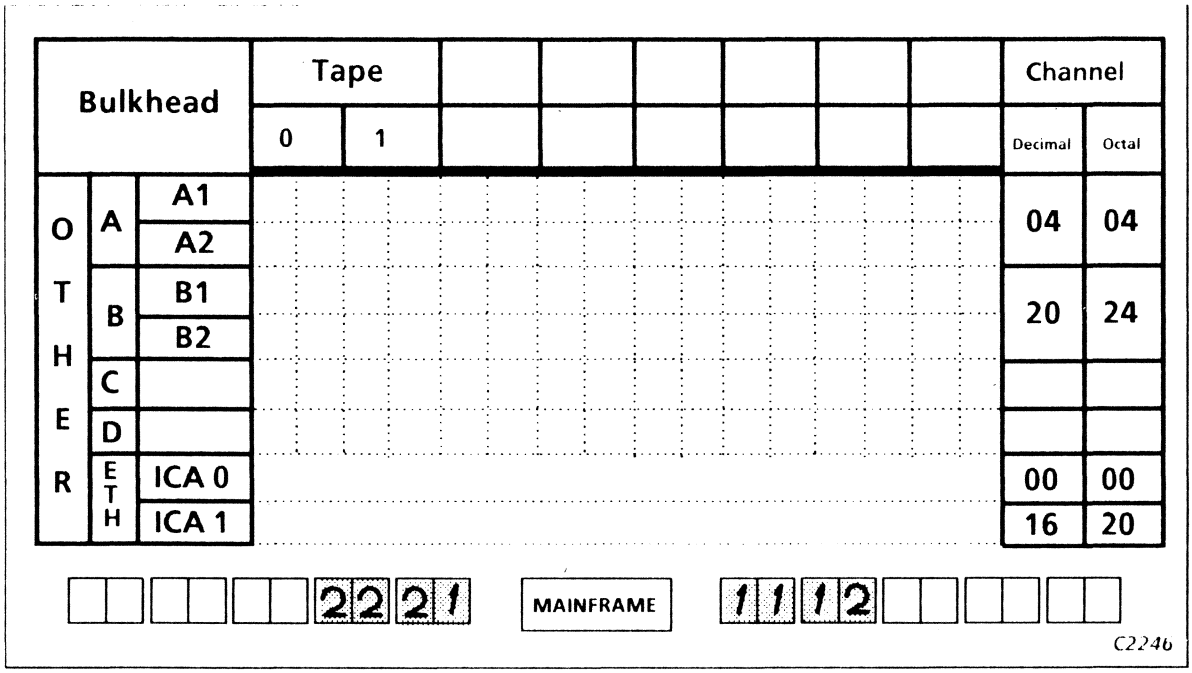
Disk strings, cabinet numbers, and the order in which you cable the cabinets are unimportant when connecting power control cables. Because you can have two power control strings from the mainframe, the easiest way to connect the power control cables is according to the customer's floor plan for the equipment order (number of disk and tape/disk cabinets).

An Overview of Connecting Power Control Cables



☐ As you connect the power control cables, fill out the last line on the cable configuration map. This is the record of how the cabinets are connected, in terms of power control. Use the two-character identifiers to refer to the cabinets.

Cable Connectivity Map--Power Control Information



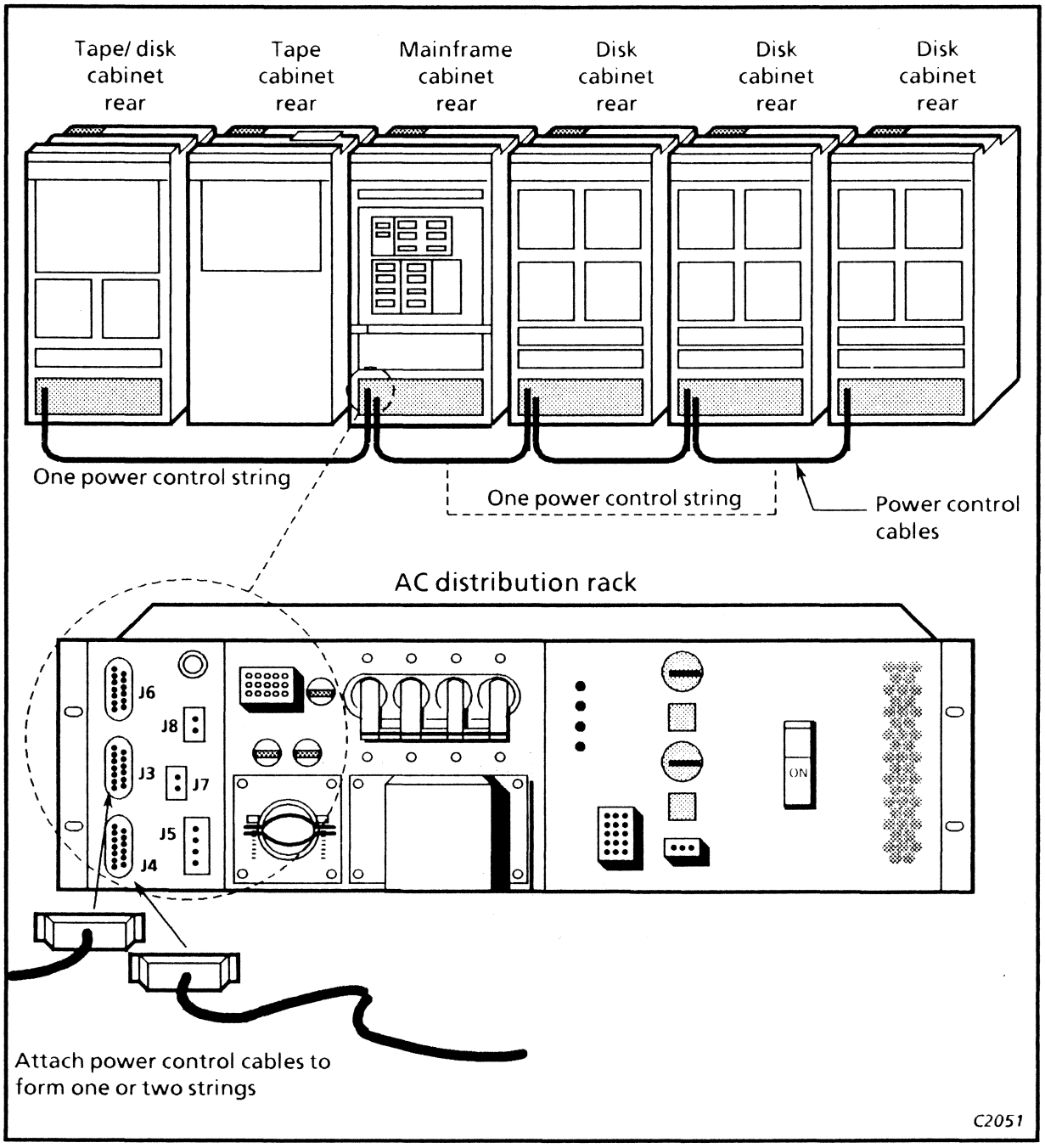
Optional Length Extender Cables

The standard power control cables are 3 m (10 ft). When a customer orders optional length IPI extender cables, the cable set includes a matching power control cable: either 7.6 m (25 ft) or 25.9 m (85 ft). Because the power control cable cannot be attached directly to another power control cable, the matching power control cable is longer than the IPI signal cable.

When using an optional cable set, *remove the standard power control cable* and attach the longer optional power control cable in its place. Then add the IPI extender cables.

Before connecting the power control cables, review the figure on the following page.

A Detailed View of Connecting Power Control Cables



CDCNET Transceiver Cable

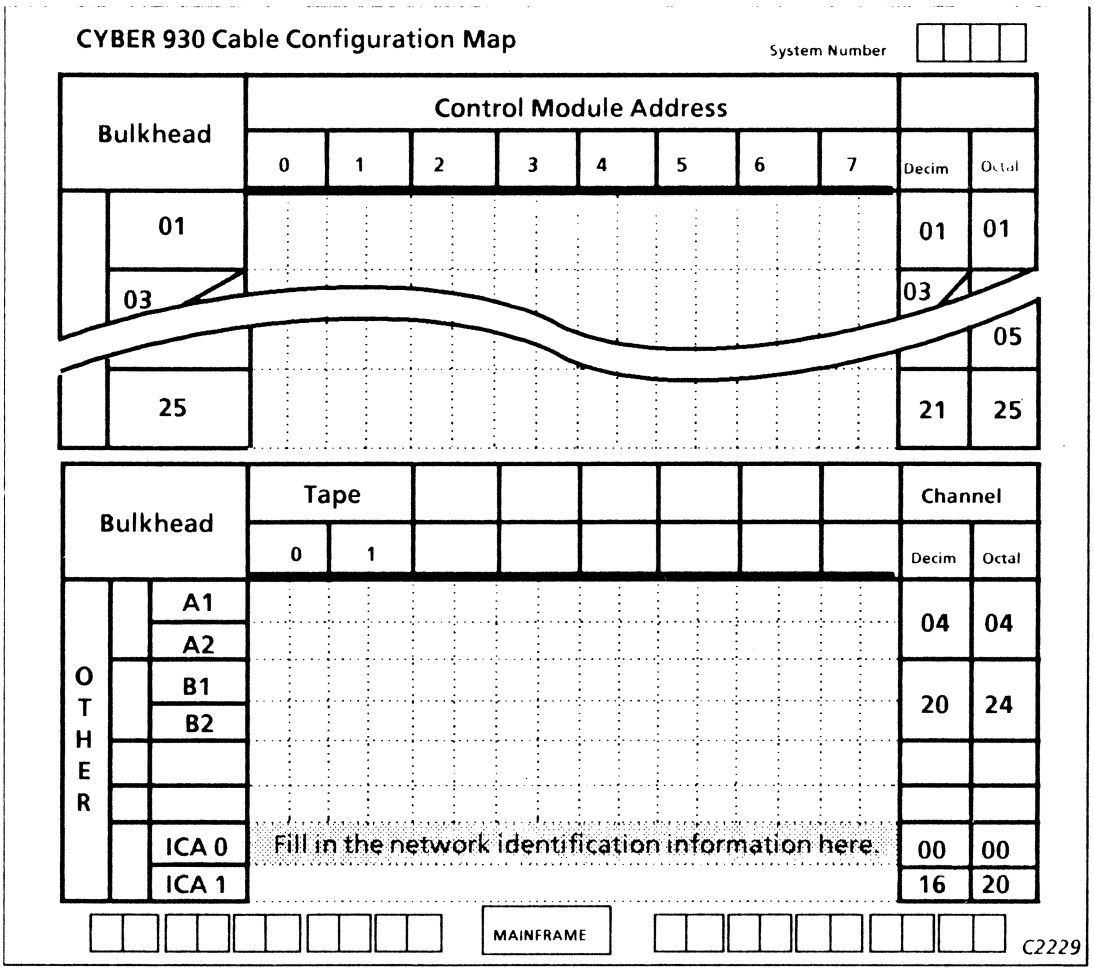
The transceiver cable(s) is part of the CDCNET shipment to the customer.

To connect the transceiver cable:

- ☐ Connect one end of the transceiver cable to the Integrated Communications Adapater (ICA) connector on the mainframe bulkhead;
- ☐ Connect the other end to the CDCNET network. Secure the connection and tighten the retention screws.
- ☐ Add the network identification information to the cable configuration map.

For complete CDCNET installation, refer to the Local Area Network Installation Guide [Control Data publication 60462870] and the Device Interface (DI) Installation and Checkout Guide [Control Data publication 60460580]

Cable Configuration Map--CDCNET



Console Signal Cables

All console signal cables are packed with the console. A special 15.2 m (50 ft) signal cable connects the console to the mainframe.

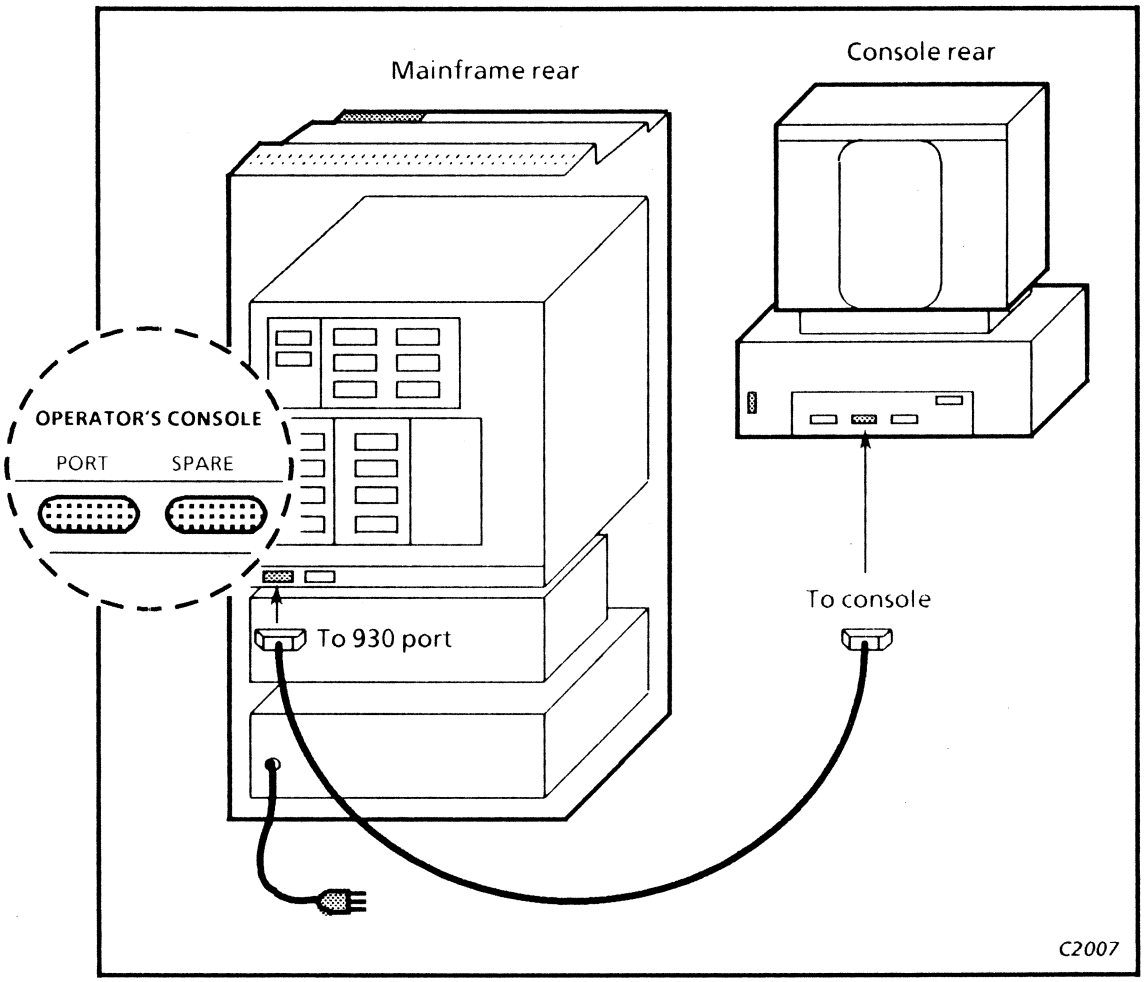
Console-to-Mainframe Cable

☐ Attach the connector labeled **930 Port** to the mainframe as shown in the figure below.

☐ Attach the connector labeled **Console** to the console port.

> **⚠ WARNING**
>
> The cable is not symmetrical. Make sure that you attach the console end of the cable to the console and the 930 Port end of the cable to the mainframe.

Connecting the Console Signal Cable to the Mainframe



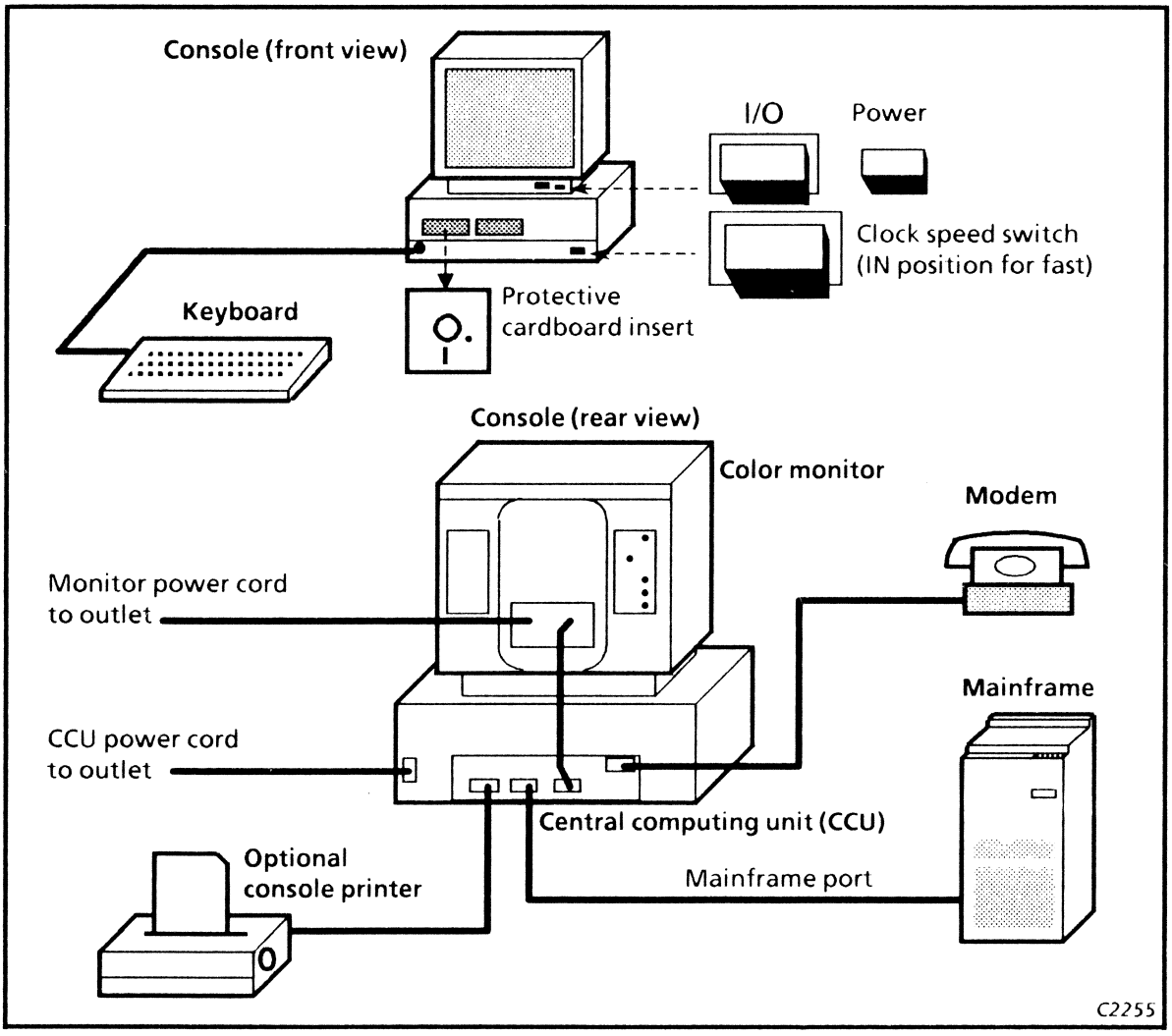
Other Console Signal Cables

Connect the other console signal cables in the following order:

1. Monitor-to-console central computing unit (CCU)
2. Keyboard-to-console
3. Modem-to-console, if applicable
4. If the customer has a printer, connect it to the optional console printer port.

Verify that both the console central computing unit and the monitor power switches are set to off. Remove the protective cardboard insert from the diskette drive.

Connecting Console Signal Cables

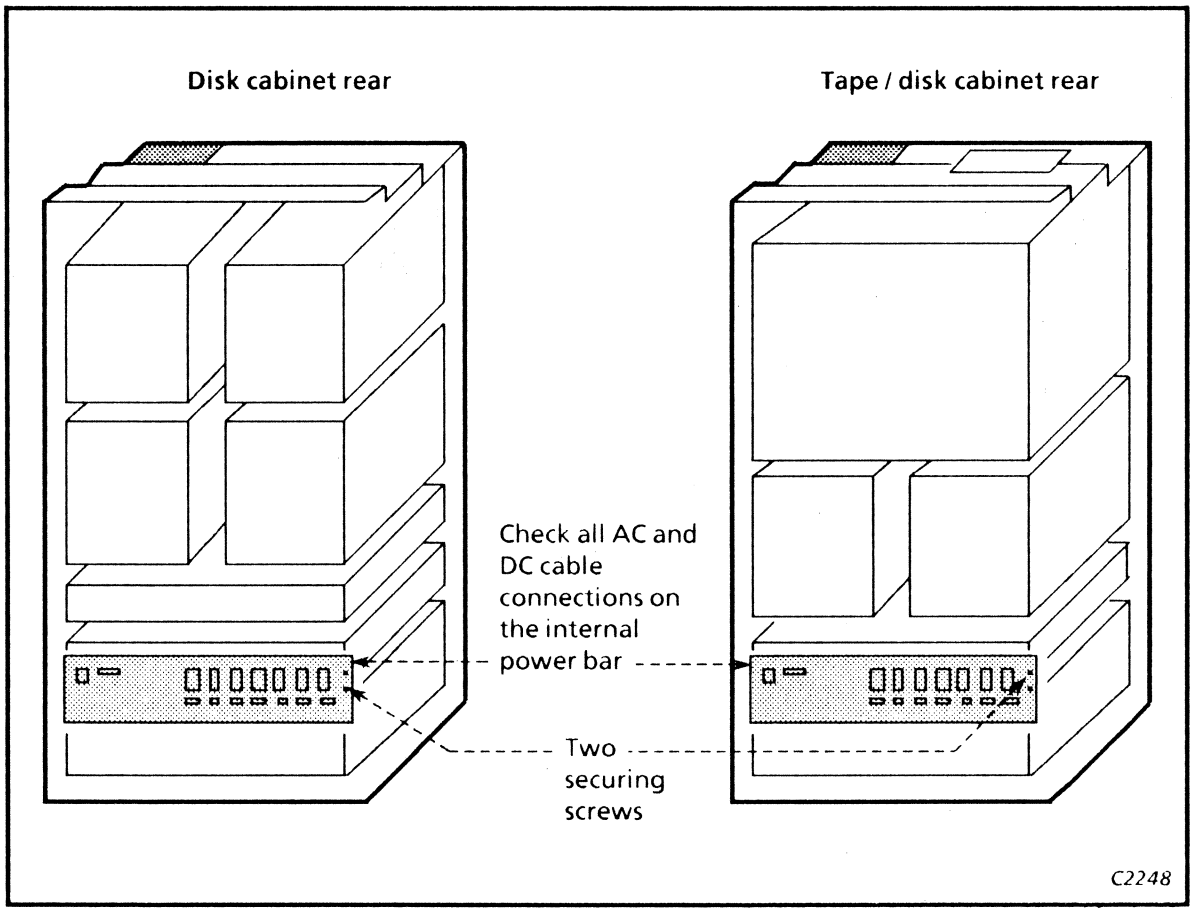


Apply Power - Two Installers

Before applying power, do the following:

- ☐ Check all cable connections. Connections must be good, secure, and tight.
- ☐ Tighten all retention screws that secure cables in the disk and tape/disk cabinets.
- ☐ Check and tighten the connections made to the mainframe bulkhead for IPI cables, ISMT cables, Ethernet (CDCNET) cables, and the console cable.
- ☐ Make sure that all AC and DC power cords are secure in the internal power bar of the disk and tape/disk cabinets. The figure below shows the location of the internal power bar.

Internal Power Bar


Disk cabinet rear
Tape / disk cabinet rear
Check all AC and DC cable connections on the internal power bar
Two securing screws
C2248

☐ Complete the power safety checks. Verify that the service switch, main breaker, and battery charger are set to OFF in every cabinet.

☐ Plug in the power cords in the following order:

1. Console central computing unit, console monitor, and modem.
2. Mainframe cabinet. Insert the 60-Hz mainframe power cord twist-lock connector in the receptable. Turn it clockwise to lock it into position.
3. Disk cabinets. Insert the twist-lock power connector of a 60-Hz disk cabinet in the receptable. Turn it clockwise to lock it into position.
4. Disk/tape cabinets.
5. Tape cabinets.
6. Other peripherals, such as XMD3s and CYBER 170 peripherals.

If local regulations require the presence of an electrician, or if power is 50-Hz, the electrician plugs in all power cords.

Refer to the following figure , turn on all switches and breakers in the following sequence.

Starting with the disk (or tape/disk) cabinet farthest away from the mainframe, cabinet by cabinet, and ending with the mainframe :

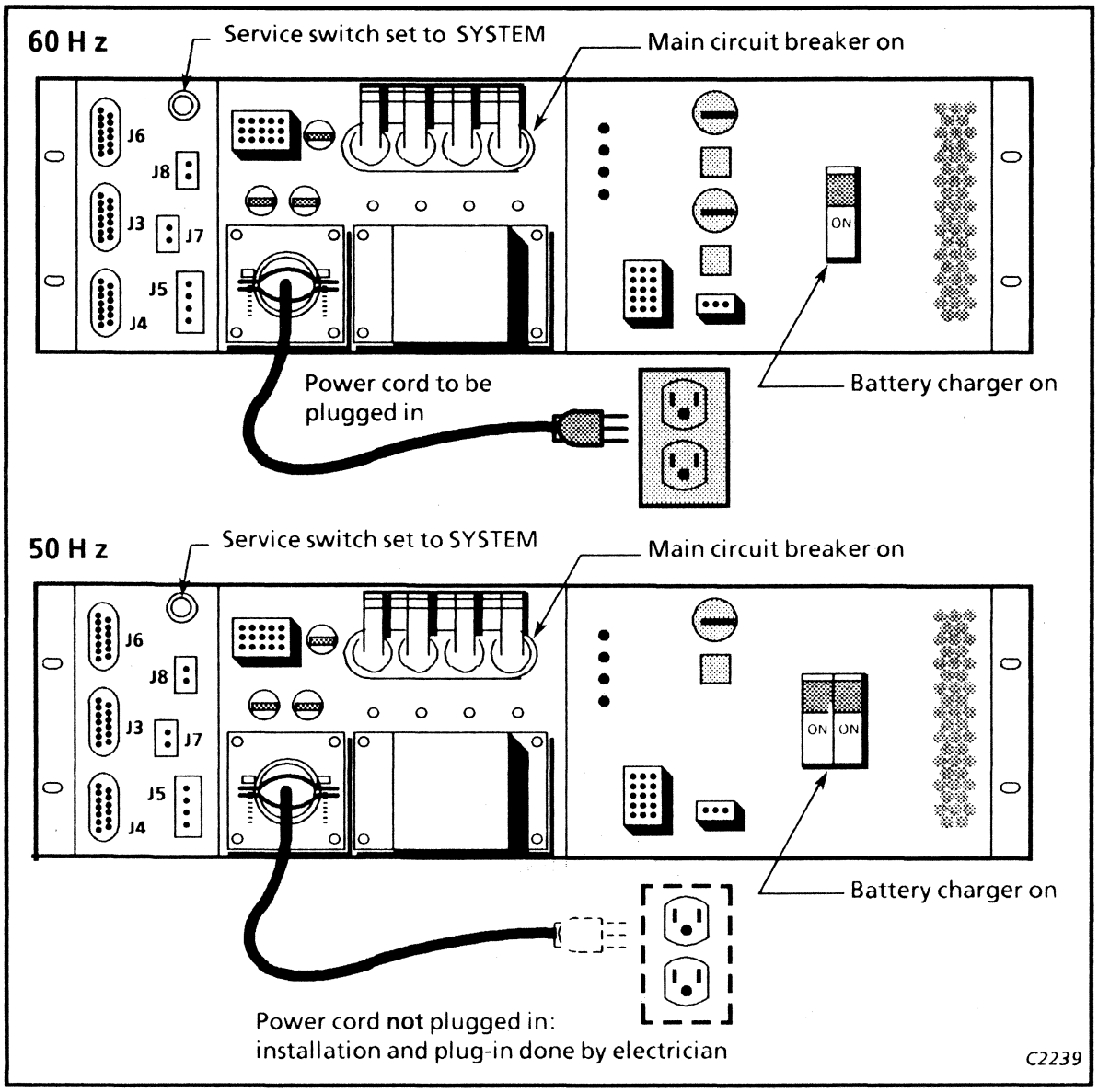
☐ Set the service switch to system by gently pulling the switch toward you and toggling it into the middle position

☐ Switch the main breaker on

☐ Switch the battery charger on

The system is now ready for powering on.

AC and DC Power On



Turn System Power On

The CYBER 930 has a built-in, automatic power-on feature. This gives customers one-button power on and the convenience of automatic initiation of NOS/VE when they turn on the console. Automatic power-on is disabled at the factory; therefore, you must manually power the system on through the console software.

To power on the system, do the following:

☐ Turn on the console monitor.

☐ Turn on the console central computing unit. The following is displayed:

```
Initializing Console Software
. . . Please Wait . . .


System power is OFF
```

After a few seconds, the Console Main menu is displayed:

```
CONSOLE MAIN MENU
Initiate NOS/VE
Maintenance
Remote Operations
Control System Power
Shut Down Console
```

☐ Press **C** to select Control System Power.

```
CONTROL SYSTEM POWER

Mainframe power is OFF


Press F10 to turn power ON
```

☐ Press <F10> once and wait. As the screen display changes, you hear several clicks from the mainframe, disk, and tape/disk cabinets as power comes on and the fans and subassemblies start up. The console is turning system power on and initializing the mainframe hardware.

```
CONTROL SYSTEM POWER

Mainframe power    is    ON
    Power System   is    GOOD
    Two Port Mux   is    ON

Press F10 to turn power OFF
```

☐ To reenable automatic power on, press the following keys to display the Initiate NOS/VE Options menu:

<Esc>	to return to the Console Main menu.
M	to display the Maintenance menu.
U	to display the Utilities menu.
S	to select the system options screen.
<PgDn>	to view the second page of Initiate NOS/VE Options.

```
"INITIATE NOS/VE" OPTIONS

FORCE HARDWARE INITIALIZE ..... NO
    INCLUDE DIAGNOSTIC TESTING ..... NO
    PERMIT DEGRADES ON ERROR ..... NO
ENABLE MDD UTILITY ..... NO
LOAD MICROCODE ..... YES
PERFORM CM RELOAD FROM ..... NO
    DEADSTART DUMP TAPE

CONSOLE OPTIONS

ENABLE AUTOMATIC POWER ON ..... NO

Valid Entries: YES, NO
```

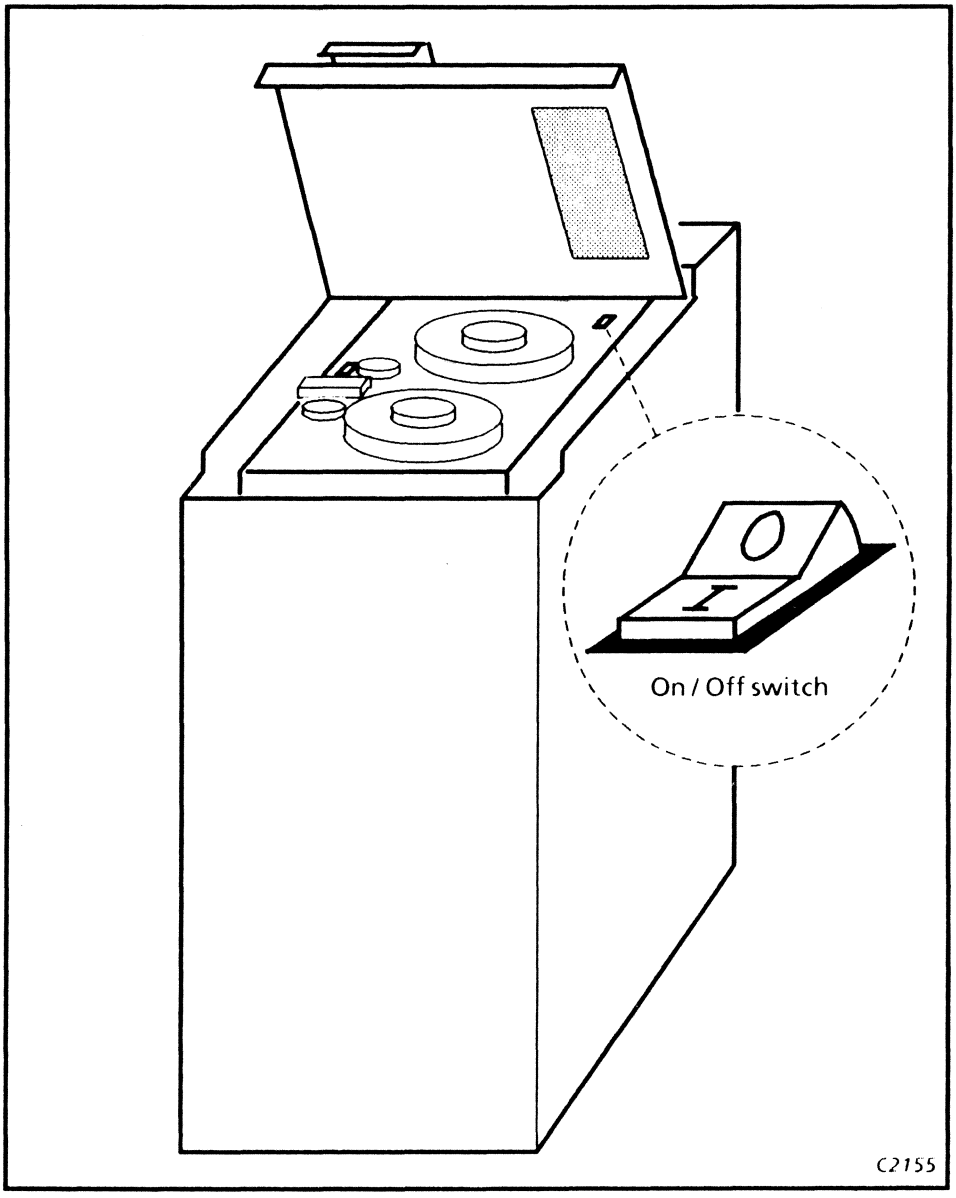
☐ Press <↓> six times to highlight the Enable Automatic Power On option and press <Return> to toggle the option to YES.

☐ Press <F3> to save the Enable Automatic Power On option. Press <Esc> twice to return to the Console Main menu.

You can now apply power to the tape cabinet and tape portion of the tape/disk cabinets.

- ☐ Press the on/off switch (shown in the figure below) to apply power to all tape subsystems. Power on both tape subsystems on the same channel; that is **A1** and **A2** or **B1** and **B2**, for successful access to either one.
- ☐ Now apply power to all other peripherals.

The Tape Subassembly On/Off Switch



Specify the Hardware Options

To specify the hardware options:

- ☐ Open the front door of the mainframe and take the cable configuration map from the literature holder.
- ☐ Enter the following sequence to select the Specify Hardware Options menu:

  M to select Maintenance from the Console Main menu
  E to select Engineering Tasks
  S to display the Specify Hardware Options menu shown below.

- ☐ Verify the pak types and channel numbers in slots 15 through 20 as specified in the cable configuration map. If an entry is wrong, correct it as follows:

  - ☐ To enter the required pak and channel number for a slot, press <Return>s until the designated pak type or channel number is displayed.
  - ☐ Press <F3> to save the contents and exit.
  - ☐ Return the cable configuration map to the literature holder and close the front door of the mainframe.

Specify Hardware Options Menu

*** SPECIFY HARDWARE OPTIONS ***

93?-?? Model # ? Serial # ?

SLOT #	PAK	SLOT #	PAK	CH # (octal)
01	MEM 1	15	UNUSED SLOT	--
02	MEM 3	16	170 ADAPTER	-- --
03	MEM 2	17	ICA ADAPTER	--
04	MEM 4	18	ICA ADAPTER	--
05	CPU0 C	19	ISMT ADAPTER	--
06	CPU0 B	20	ISMT ADAPTER	--
07	CPU0 A			
08	CLOCK			
09	PAGE MAP			
10	PPUS 00-05			
11	PPUS 20-24			
12	CHANNELS 00-05			
13	CHANNELS 20-25			
14	TPM/MAC			

Section 6
Completing Installation

Check the System Clock 6-2

Run Diagnostics 6-4

Set Up Remote Technical Assistance 6-6

Verify Modem Communications Parameters 6-6

Edit the Telephone Lists 6-8

Verify Remote Technical Assistance 6-10

Verify Diagnostics 6-14

Verify Battery Backup Operation 6-16

Mainframe Battery Online Check 6-16

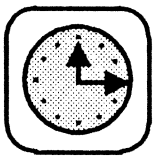
Peripheral Cabinet Battery Online Check 6-18

Cable Housekeeping 6-20

Fill Out Reports 6-22

Hand the System Over to the Customer 6-23

Check the System Clock



Before you run diagnostics, verify the date and time of the system clock. If they are incorrect, change them as follows:

☐ At the Console Main menu, press **M** to display the Maintenance menu.

```
MAINTENANCE
Utilities
Run Mainframe Diagnostics
Perform Deadstart Dump
Set System Clock
Analyze Last Error
EngineeringTasks
```

☐ Press **S** to display the Set System Clock menu.

```
SET SYSTEM CLOCK

Enter Date-Time :   00 / 00 / 00-00 : 00
                    YY / MM / DD-HH : MM

CONSOLE MODE        BS ← : Left  Space → : Right  Return : Set Clock  ESC : Abort
```

- ☐ If the date and time are correct, press <Esc> twice to return to the Main menu.
- ☐ If the date and time are incorrect, correct them.
- ☐ Press <Return> to set the system clock and to return to the Maintenance menu. To verify the changes in the system clock:
  - ☐ Press **S** to view and verify the corrected screen.
    - ☐ If the clock is correct, press <Esc> twice to return to the Console Main menu.
    - ☐ If the changes are incorrect, reenter the correct date and time. Press <Return> and repeat the verification process.

For additional information on changing the system clock, press <Alt F1> to view online help or refer to the CYBER 930 Computer System Guide to Operations [Control Data publication 60469560].

Run Diagnostics

When the mechanical part of installation is complete, validate the mainframe and peripheral hardware in an operating system environment. The System Validation Suite (SVS) tests CYBER 930 hardware feaures by executing operating system functions, test jobs, and online hardware diagnostics.

Running SVS diagnostics takes about one hour to complete one pass of CYBER 930 system verification testing. The actual testing time depends, in part, on the size of the system you install.

Before proceeding:

- ☐ Power all tape drives on.
- ☐ Mount an unlabeled scratch tape with a write ring on each tape drive .
- ☐ Ready each tape drive.

To execute SVS diagnostics

- ☐ Press **I** at the Console Main menu to initiate NOS/VE.

CONSOLE MAIN MENU

Initiate **NOS/VE**
Maintenance
Remote Operations
Control System Power
Shut Down Console

Over the next few minutes, the console displays several screens, starting with a CIP location screen, to keep you informed of the initialization process. If NOS/VE initialization is successful, the following prompts appear:

```
---- DEADSTART COMPLETE -----
/
@
```

☐ If the system is running NOS/VE L1.3.1, type the commands listed below and press <Return> after each one:

```
SETCL A=$SYSTEM.SVS.COMMAND_LIBRARY
ESTSE V
SETJCL MAINTENANCE 50
RUNSVS FOR 1 PASS
```

If the system is running NOS/VE L688 or earlier version, type the commands listed below and press <Return> after each one:

```
SETCL A=$SYSTEM.SVS.COMMAND_LIBRARY
ESTSE V
ONEPASS
```

After you enter the second command line and SVS is established successfully, the following screen is displayed. When you enter the last command line, the screen flashes the ONEPASS prompt while the system initializes and begins testing.

```
NOS/VE SYSTEM VALIDATION SUITE

TEST SYSTEM 9301   SN???

LOADING SVS COMPLETE -- ENTER COMMAND

HELP IS AVAILABLE -- ENTER: HELP
```

After the tests start, set up and verify Remote Technical Assistance. Later, redisplay NOS/VE to see the results of the system verification test.

Set Up Remote Technical Assistance

If the customer allows Remote Technical Assistance (RTA), set up and verify it now. Installation is not complete until RTA is set up and verified.

For more about setting up and verifying Remote Technical Assistance, refer to the CYBER 930 Computer System Maintenance Guide [Control Data publication 60469540].

To set up RTA, verify the modem communications parameters and set up the telephones lists. Get the following information from the customer:

- ☐ Local callout digit used to reach an outside telephone line
- ☐ Area code
- ☐ RTA telephone number
- ☐ Pulse or tone RTA direct line dialing

After SVS diagnostics are running, press <Alt F2> to return to console mode and the Console Main menu.

```
CONSOLE MAIN MENU

Initiate NOS/VE
Maintenance
Remote Operations
Control System Power
Shut Down Console
```

☐ Press **R** to display the Remote Operations menu.

```
REMOTE OPERATIONS

Answer Incoming Calls
Call Remote Console
Direct Cable Connection
Manual Telephone Connection
```

Verify Modem Communications Parameters

Modem communications parameters are preset according to North American standards using a MultiTech Systems MultiModem 224E.

Verify that the preset modem communications parameters are correct by doing the following.

☐ From the Remote Operations menu, type **A** to select the Answer Incoming Calls menu.

```
ANSWER INCOMING CALLS
Communications Parameters
Edit Telephone List
Start Answering Calls
```

☐ Type **C** to view the preset modem communications parameters.

```
SET COMMUNICATIONS PARAMETERS
Modem Initialization String  = ATE0Q1B1S0 = 1S2 = 127&E1&Q1
Modem Dial String = ATDP
Baudrate          =  2400
Parity            =  none
```

In the menu shown above, the last character in the modem dial string parameter indicates communications are set for *pulse* dialing. If the customer's RTA direct line is set for *tone* dialing (for example, a touch tone RTA telephone), change the modem dial string parameter from ATDP to ATDT.

If you establish overseas communications, such as transatlantic communications, change the modem initialization string to :

ATE0Q1B1S0 = 1S2 = 127S7 = 60S9 = 19S10 = 20&E1

☐ If the communications parameters are correct, press <Esc> to return to the Answer Incoming Calls menu.

If you must change the preset communications parameters, call Engineering Services CYBER 930 Remote Support.

☐ Verify the DIP switch setting on the modem.

If the modem for the remote link operation is the MultiTech 224EH, set the DIP switches on the underside of the modem to the following:

Switch	Setting
3 and 8	Down
1, 2, 4 through 7	Up

Set switch 1, which is used for setting the data terminal ready signal, to Up for proper remote link termination. For modems other than the MultiTech 224EH, set the data terminal ready signal to normal.

☐ Power the modem on.

Edit the Telephone Lists

To set up RTA:

☐ Enter the telephone number(s) for CYBER 930 Remote Support in both the callout and callin telephone lists. See the help display for more information to assist you.

☐ Call CYBER 930 Remote Support for the telephone number for RTA. Remote Support may ask you to enter more than one telephone number.

☐ Be aware that the callin telephone numbers are compared by the console software before callback. Returning a call from the customer's site may require a noncomparable local callout digit and/or an area code.

☐ If the customers do not want to pay for the long distance calls, you can prefix each telephone number with the word *disable*. If the **Ignore "disable" options when answering calls** option under the console security options is set to NO, *disable* prevents the local console from returning an incoming call when a match of telephone numbers occurs. The remote console must also use *disable* to prefix its own telephone number for the disable feature to work.

If you are unfamiliar with the rules for entering telephone numbers, or you need more information, refer to the CYBER 930 Computer System Guide to Operations [Control Data publication 60469560] or to the CYBER 930 Computer System Maintenance Guide [Control Data publication 60469540].

To edit the callin telephone list, take the following steps from the Answer Incoming Calls menu:

☐ Press **E** to select the Edit Telephone List menu;

☐ If the callin telephone list is password protected, the console prompts for the password. Enter the valid password to proceed;

```
CALL IN TELEPHONE LIST
1.
2.
3.
4.
5.
6.
7.
8.
9.
```

☐ Type **1**. This allows you to enter the first number in the callin list;

☐ Enter the telephone number of the remote console; this is the number for CYBER 930 Remote Support;

  ☐ If appropriate, the telephone number should include the customer's local callout digit, the Remote Support area code or the prefix *disable*;

☐ Press <Return> to save the number and display it in the first entry in the list.

☐ If CYBER 930 Remote Support asks you to enter more than one telephone number, type **2** to add the second Remote Support telephone number to the callout list.

☐ Type **3** to add the third Remote Support telephone number to the callout list.

☐ When you complete the entries, press <Esc>.

To edit the callout telephone list, follow these steps:

☐ Type **C** at the Remote Operations menu to select the Call Remote Console menu.

☐ Type **E** to display and edit the Call Out Telephone List.

Follow the same steps and sequence to add the same telephone number(s) you entered in the callin list.

Verify Remote Technical Assistance

Call Engineering Services CYBER 930 Remote Support and ask them to verify that Remote Technical Assistance (RTA) is operational at the customer site. Give Remote Support the following information:

- ☐ RTA telephone number at the customer's site
- ☐ Customer's area code, if appropriate
- ☐ If you changed any of the preset defaults, the modem communications parameters

CYBER 930 Remote Support initiates the call to establish the RTA link. To prepare the customer's console (the local console) to accept the call from Remote Support (the remote console), take the following steps:

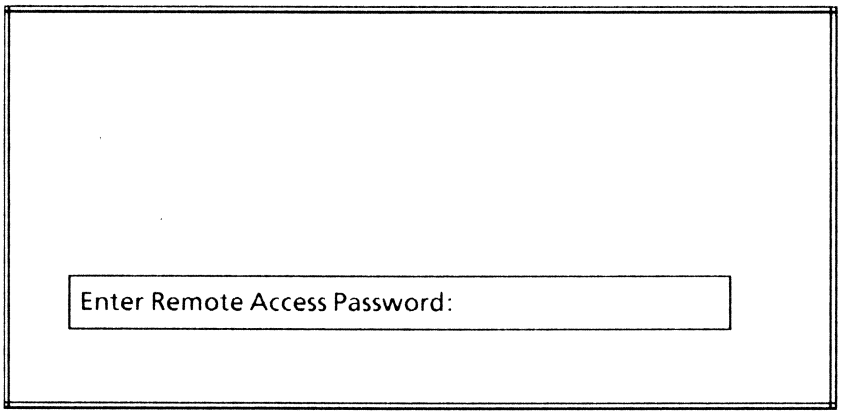
- ☐ Type **A** at the Remote Operations menu to select the Answer Incoming Calls menu.

```
ANSWER INCOMING CALLS
Communications Parameters
Edit Telephone List
Start Answering Calls
```

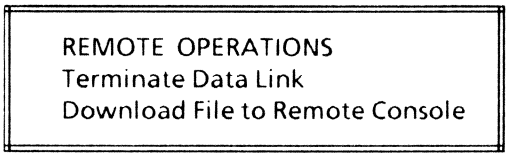
- ☐ Type **S** to select the Start Answering Calls menu. The following message is displayed and the console is now set to receive a call.

```
Set to answer calls in succession

Press <ESC> to return to previous menu

... waiting for call ...
```

When CYBER 930 Remote Support calls, the local console accepts the call, disconnects, and then calls the remote console back. If the connection is made and the password is not set to NULL, the console prompts for the remote access password. The remote operator must enter a valid password to establish the remote link.



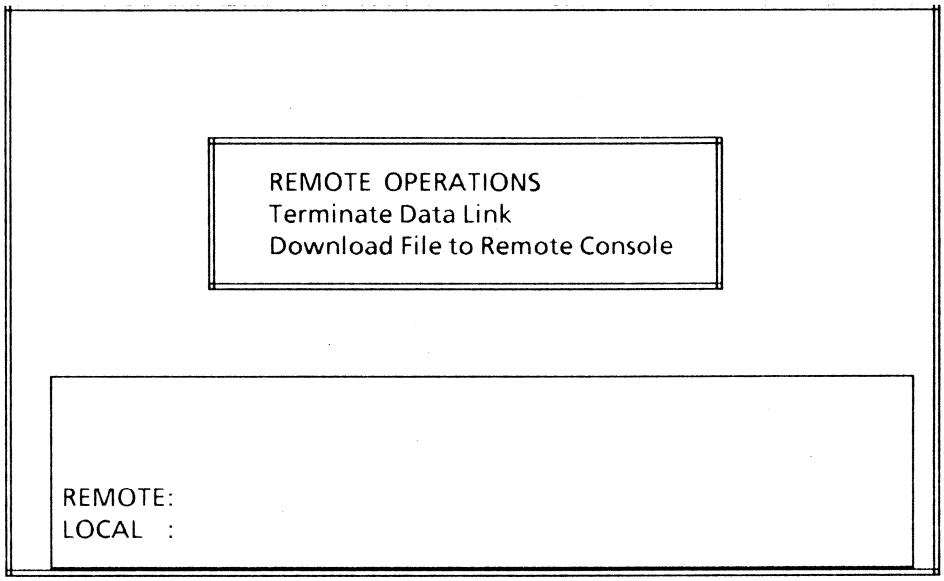
Once a link is established, the Remote Operations menu is displayed on the screen.



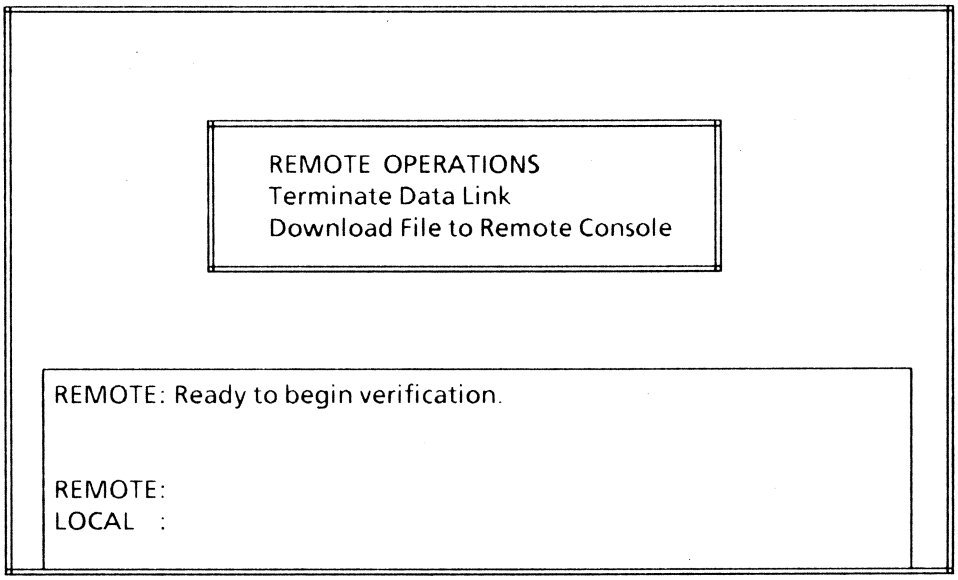
During RTA only one console, either the remote or the local, has control of the keyboard.

To start the RTA session, the remote operator presses <Esc> to return to the Console Main menu and to have control of the keyboard. The display at the local console changes to reflect what the remote console is displaying.

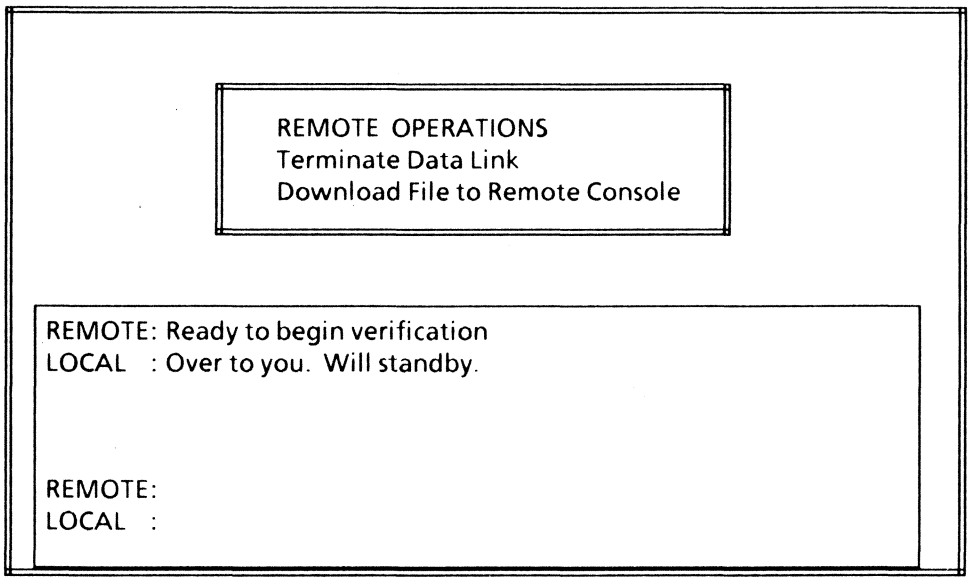
You and the remote operator can use the Interconsole Communications Facility (ICCF) to send and receive messages on a special display window. To activate ICCF, press <ALT F3> at any screen while in console mode.



As the remote operator enters a message, you see it appear following the REMOTE: indicator. When the remote operator completes the message and presses <Return>, the message is redisplayed at the top of the ICCF window. The local console can now send a reply.



The local console message appears beside the LOCAL: indicator as you enter your reply. When your reply is complete, press <Return> to redisplay the message at the top of the ICCF window and to allow Remote Support to either respond or perform some additional RTA checks.



CYBER 930 Remote Support sends a message using the ICCF to let you know RTA has been verified.

After the RTA session, Remote Support terminates the RTA link. Your console display indicates that the console is ready to accept additional calls. To terminate the process and return to the Console Main menu, press <Esc> twice.

Verify Diagnostics

To redisplay NOS/VE:

☐ Press <Alt F2>.

When SVS testing is complete, the console displays a TESTING COMPLETED message, and either PASSED or FAILED in large block letters.

If the test fails, HPA/VE automatically generates and prints reports that include any intermittent or corrected hardware failures.

If the test fails, and the HPA/VE report indicates that the errors are corrected memory errors, *do not replace any memory paks*. The memory pak has a built-in spare bit per half memory word. Unless the error rate is so high that it affects the system performance, do not replace any memory pak. This is s a special case where you should treat the test as passed.

For more information on HPA/VE reports and SVS, refer to the CYBER 930 Maintenance Guide [Control Data publication 60469540].

If you require additional help or the CYBER 930 Computer System failed the SVS diagnostics , contact Customer Support Services at one of the following telephone numbers:

- United States: 800 345-9904
- Canada: 800 345-9903
- International (includes Alaska and Hawaii): 612 851-4131

If the CYBER 930 Computer System PASSED, exit NOS/VE and return to console mode.

☐ Type the following command and press <Return>.

```
terminate_system
```

☐ Press <Alt F2> to return to the Console Main menu.

If the CYBER 930 Computer System does not have the battery backup option, skip the procedure on the next page for verifying the battery backup operation and power the system off as follows:

- ☐ Press C to select the Control System Power menu.
- ☐ Press <F10>.
- ☐ Press <Esc>.
- ☐ Turn off console power.
- ☐ Turn off the tape units in all tape and tape/disk cabinets.
- ☐ Turn off any other peripheral units you installed, such as expanded module drives and CYBER 170 peripherals.

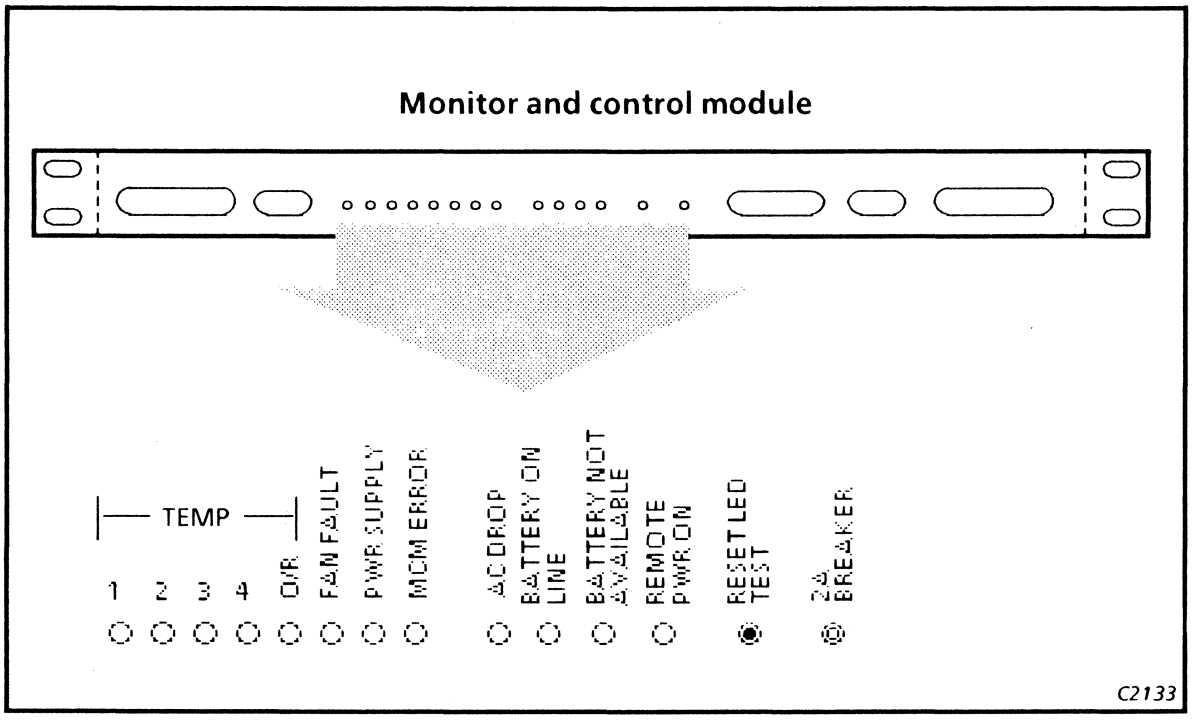
Verify Battery Backup Operation

A fully charged battery backup can maintain cabinet power up to two minutes during power interruption. To avoid unnecessary draining of the batteries, verify the battery operation in the mainframe or peripheral cabinets online for only 15 seconds.

Because the elapsed time for verification is short, one installer should check the indicators in the third step while the other disconnects or connects the AC Hubbell in the second step.

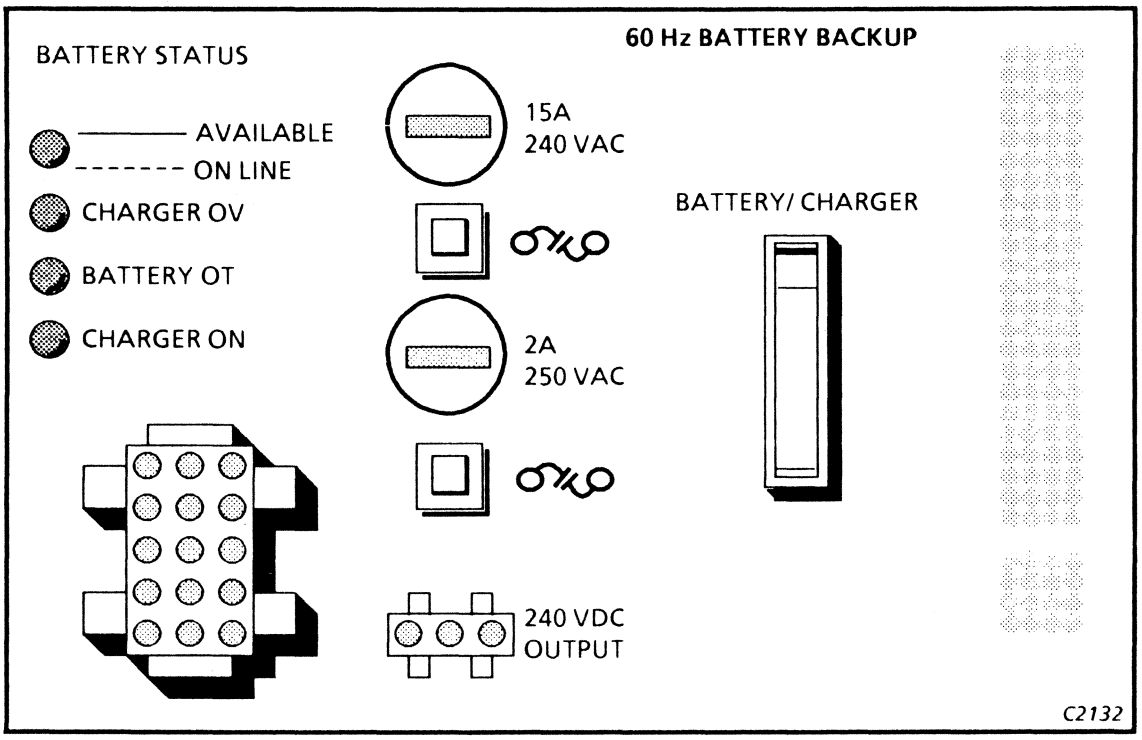
Mainframe Battery Online Check

- ☐ Ensure that the service switch is set to SYSTEM and the system is on.
- ☐ Disconnect the AC Hubbell connector from the wall outlet and take a time count of 15 seconds.
- ☐ Verify the following:
  - ☐ The BATTERY ON LINE and AC DROP indicators on the monitor and control module are lit.



☐ The AVAILABLE ON LINE indicator on the battery charger is flashing.

☐ The mainframe power remains on.



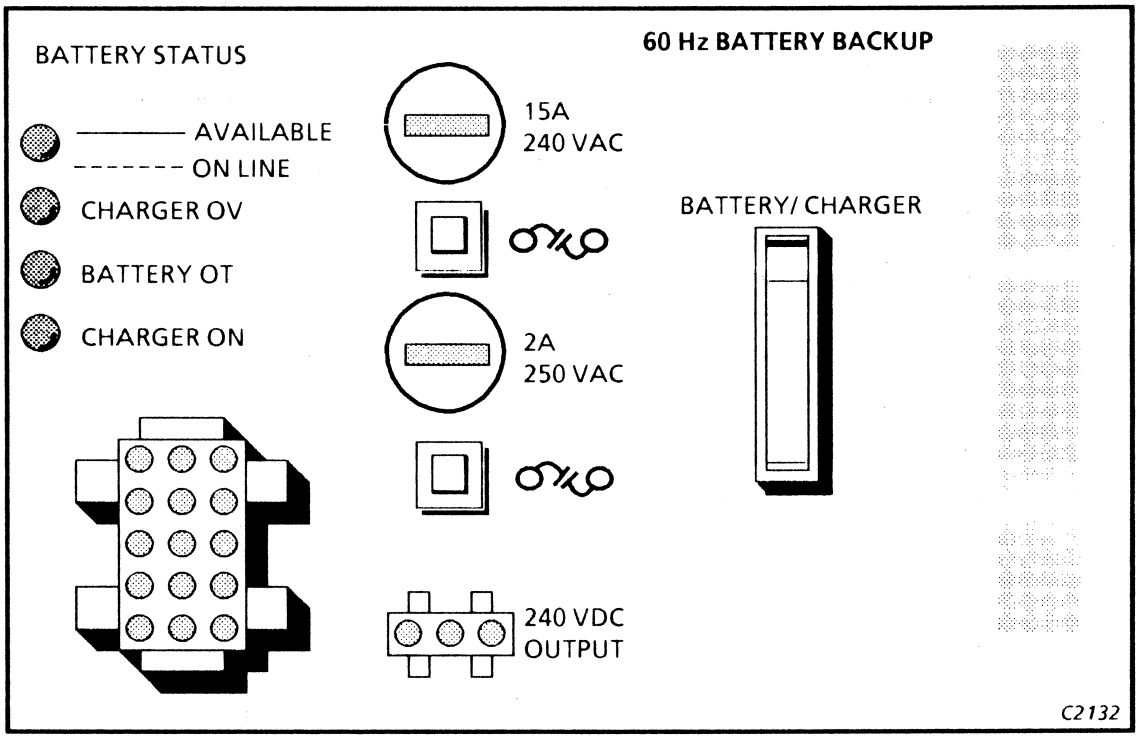
☐ At the end of the 15 seconds, reconnect the AC hubbell connector to the power outlet.

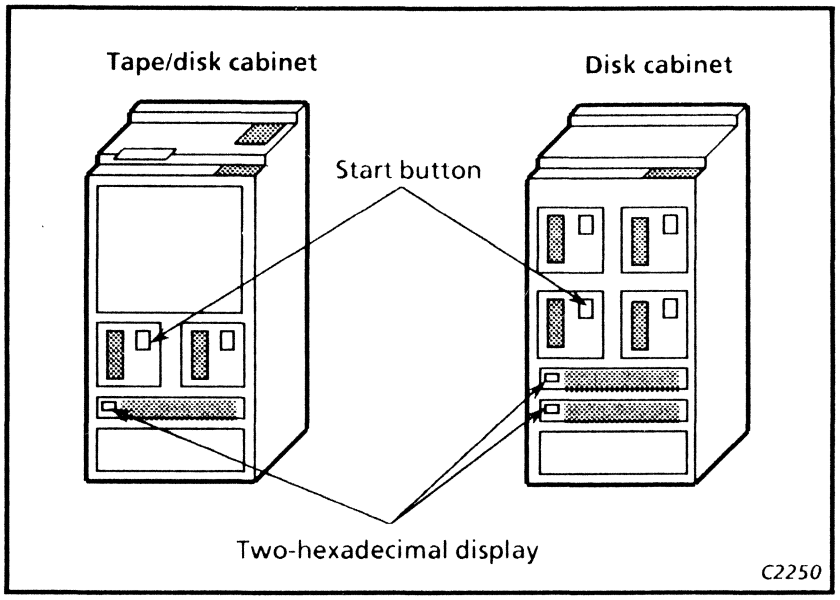
☐ Verify the following:

- ☐ BATTERY ON LINE and AC DROP indicators on the monitor and control module are off.
- ☐ AVAILABLE ON LINE indicator on the battery charger is on but not flashing.
- ☐ Mainframe power remains on.

Peripheral Cabinet Battery Online Check

- ☐ Ensure that the service switch is set to SYSTEM and the system is on.
- ☐ Disconnect the AC Hubbell connector of the peripheral cabinet from the wall outlet and take a time count of 15 seconds.
- ☐ Verify the following:
  - ☐ AVAILABLE ON LINE indicator on the battery charger is flashing.
  - ☐ Cabinet power remains on.
  - ☐ Green indicator (start button) on each disk drive is lit.
  - ☐ The two-hexadecimal error display on the control module is on.
    - ☐ BATTERY ON LINE indicator on the monitor and control module of the mainframe is on.
    - ☐ AC DROP indicator on the monitor and control module is off.





- ☐ After 15 seconds, reconnect the AC hubbell connector to the power outlet.
- ☐ Verify the following:
  - ☐ AVAILABLE ON LINE indicator on the battery charger is on but not flashing.
  - ☐ Cabinet power remains on.
  - ☐ BATTERY ON LINE indicator on the monitor and control module of the Mainframe is off.
- ☐ Return the system to the customer.
- ☐ Repeat the above procedure for each cabinet that contains a battery backup option.

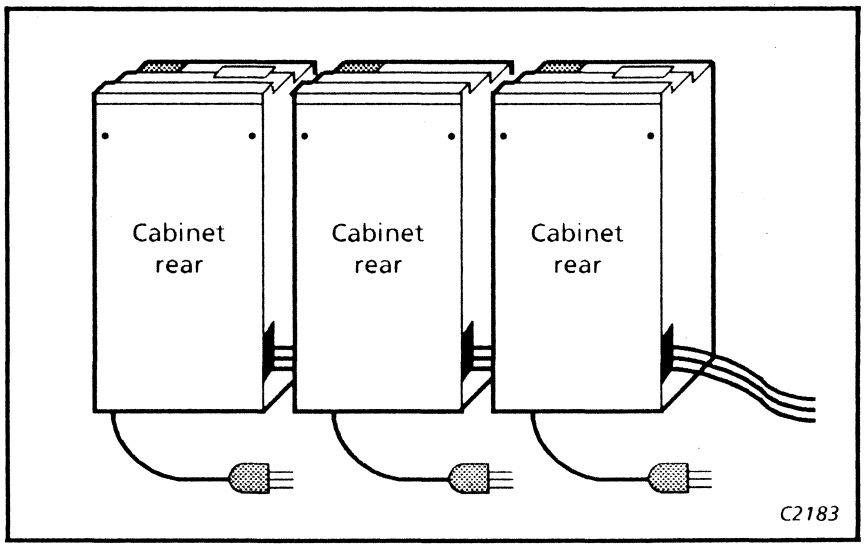
Cable Housekeeping

Before you close and lock the cabinet doors, tidy the external cables.

- ☐ String the signal and power control cables through the side openings from cabinet to cabinet as shown in the illustration below. Power cords exit through the cutouts in the cable trough at the bottom of the cabinets.

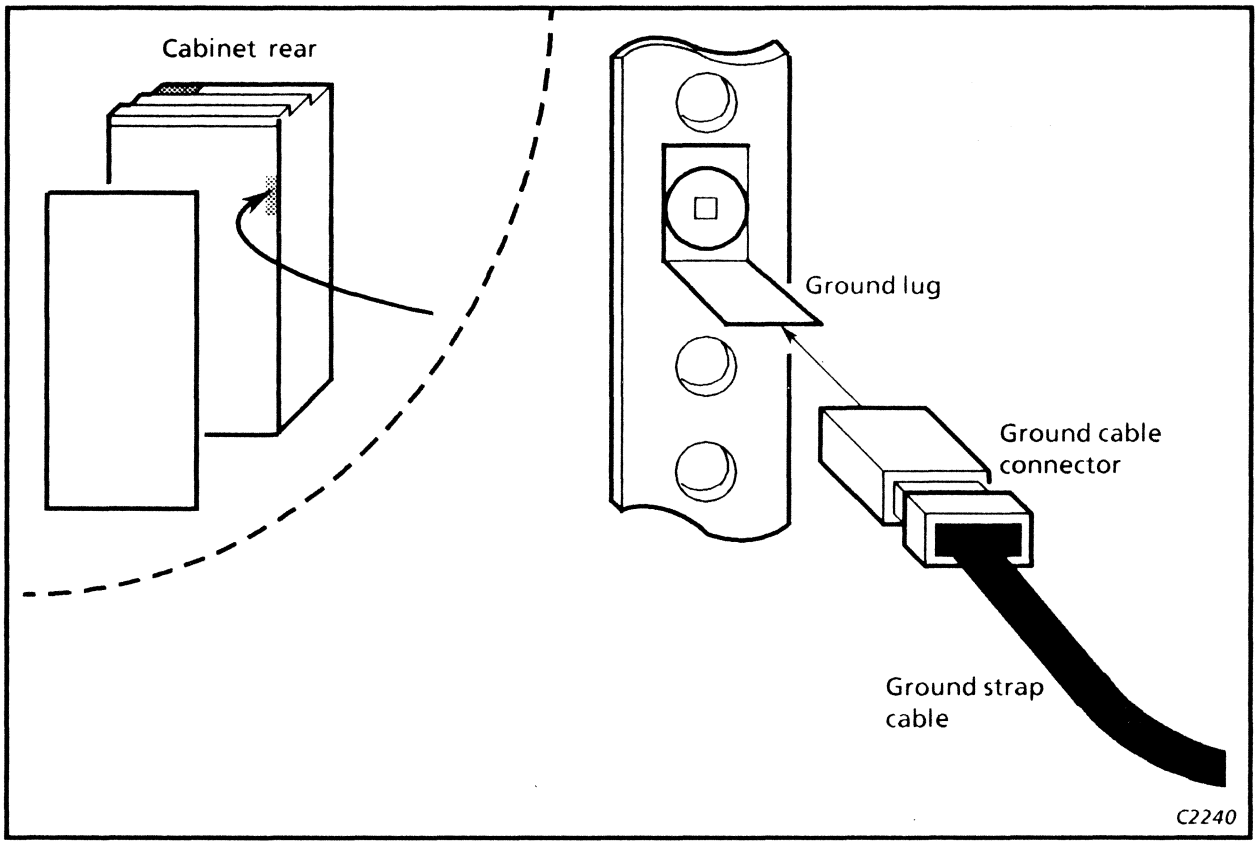
- ☐ Place a copy of the cable configuration map and the customer's floor plan inside the pocket of the front door of the mainframe. Replace any label kits removed from the pocket of the front door of the mainframe during installation.

Cable Housekeeping

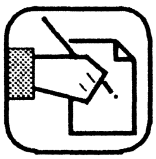


- ☐ Close and lock the front doors of all cabinets with the key provided.
- ☐ Close and lock the rear doors, one cabinet at a time.
  - ☐ Position the cabinet rear door.
  - ☐ Attach the rear door ground strap connector to the ground lug as shown in the figure below.
  - ☐ Turn a 4 mm (5/32 in) hexdriver clockwise to secure both rear door latches.
  - ☐ Repeat for each cabinet.

Attaching the Rear Door Ground Strap



Fill Out Reports



Complete the Installation Quality Program (IQP) Report. The QSA Manual contains the IQP Report and directions for completing it.

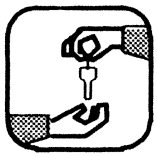
Depending on your Engineering Services branch office policy, you may also have to complete a maintenance activity form. Follow the directions on the form.

The procedure for submitting these reports depends on your Engineering Services branch office policy.

Send the QSA manual and one copy of the cable configuration map to the engineer-in-charge or to your Engineering Services branch manager.

Forward any comments you have on the CYBER 930 Installation Guide. Either return the Comment Sheet form at the back of this book or submit a Technical Action Request (TAR). Be sure to include the address of the Engineering Services branch office and your telephone or Controlnet number.

Hand the System Over to the Customer



- ☐ Show the customer the two ways to power the system on:
  - ☐ By using the automatic, one button power-on feature.
  - ☐ By by-passing the automatic power-on and instead powering the system on through console software menus.
- ☐ Give the customer the keys to the CYBER 930 Computer System. Retain a set of keys for Engineering Services.
- ☐ Give the customer a copy of the completed cable configuration map.
- ☐ Tell the customer that the passwords are currently set to NULL and that directions on how to change them are in the CYBER 930 Computer System Guide to Operations [Control Data publication 60469560].

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